

**SEARCH REQUEST FORM****Scientific and Technical Information Center**

Requester's Full Name: Michael LaVilla Examiner #: 73026 Date: 8-24-06  
 Art Unit: 1775 Phone Number (404) 2-1539 Serial Number: 10/532,804  
 Mail Box and Bldg/Room Location: 5E75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

*Please see attached.*

*(Closest act toward beginning of printout.)*

<b>STAFF USE ONLY</b>		<b>Type of Search</b>	<b>Vendors and cost where applicable</b>
Searcher:	<u>EJ</u>	NA Sequence (#)	STN <u>\$ 501.74</u>
Searcher Phone #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	<u>(1)</u> Questel/Orbit
Date Searcher Picked Up:		Bibliographic	<u>(and)</u> Dr. Link
Date Completed:	<u>8-25-06</u>	Litigation	<u>→</u> Lexis/Nexis
Searcher Prep & Review Time:	<u>5</u>	Fulltext	Sequence Systems
Clerical Prep Time:		Patent Family	WWW/Internet
Online Time:	<u>85</u>	Other	Other (specify)

Banks, Kendra

199566

**From:** MICHAEL LAVILLA [michael.lavilla@uspto.gov]  
**Sent:** Wednesday, August 23, 2006 5:49 PM  
**To:** STIC-EIC1700  
**Subject:** Database Search Request, Serial Number: 10/532,804

**Requester:**  
MICHAEL LAVILLA (P/1775)

**Art Unit:**  
GROUP ART UNIT 1775

**Employee Number:**  
73026

**Office Location:**  
REM 05E75

**Phone Number:**  
(571) 272-1539

**Mailbox Number:**

**Case serial number:**  
10/532,804

**Class / Subclass(es):**

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf. Ctr.

**Earliest Priority Filing Date:**  
14 Nov. 2003

AUG 24 h

**Format preferred for results:**  
E-mail

**Search Topic Information:**

Please search claimed structure for compound of Claim 1 and 10. Thank you.

Pat. & T.M. Office

**Special Instructions and Other Comments:**

=> FILE REG

FILE 'REGISTRY' ENTERED ON 25 AUG 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2006 American Chemical Society (ACS)

=> D HIS

FILE 'REGISTRY' ENTERED ON 25 AUG 2006

E POLYACRYLAMIDE/CN

L1 1 S E3

E POLYMETHACRYLAMIDE/CN

L2 1 S E3

FILE 'HCAPLUS' ENTERED ON 25 AUG 2006

L3 39 S JACQUESON ?/AU

L4 266 S ARNOUX ?/AU

L5 6330 S DURAND ?/AU

L6 1 S SLIVIACK ?/AU

L7 1 S L3 AND L4 AND L5 AND L6  
SEL RN

FILE 'REGISTRY' ENTERED ON 25 AUG 2006

L8 5 S E1-E5

SEL L8 3 RN

L9 1 S E6

L10 91382 S STEEL#

E ZINC/CN

L11 1 S E3

E ZINC SULFATE/CN

L12 1 S E3

FILE 'HCA' ENTERED ON 25 AUG 2006

L13 107053 S L1 OR L2 OR POLYACRYLAMIDE# OR POLYMETHACRYLAMIDE# OR (

L14 749249 S L9 OR L10 OR STEEL#

L15 292845 S L11

L16 29700 S L12 OR ZNSO4 OR (ZINC# OR ZN) (W) (SULFATE# OR SULPHATE#)

L17 1046 S L13 AND L14

L18 73 S L17 AND (L15 OR L16)

L19 189179 S POLYURETHAN## OR URETHAN##

L20 293605 S POLYEPOX? OR EPOXID? OR EPOXY OR EPOXIES

L21 336017 S POLYESTER# OR POLY(A)ESTER#

FILE 'REGISTRY' ENTERED ON 25 AUG 2006

L22 69181 S ZN/ELS AND AYS/CI  
L23 69148 S L22 NOT (L9 OR L10)

FILE 'HCA' ENTERED ON 25 AUG 2006

L24 115842 S L23  
L25 89 S L17 AND (L15 OR L16 OR L24)  
L26 15 S L25 AND L19  
L27 11 S L25 AND L20  
L28 13 S L25 AND L21  
E COATINGS/CV  
L29 43471 S E2 OR E3  
E COATING PROCESS/CV  
L30 130627 S E3  
E COATING MATERIALS/CV  
L31 280412 S E3  
L32 194924 S AUTOMOB? OR AUTOMOTIV? OR VEHIC? OR CAR OR CARS OR TRUC  
L33 28 S L25 AND (L29 OR L30 OR L31)  
L34 2 S L25 AND L32  
L35 2 S L34 AND 1840-2003/PY,PRY  
L36 41 S (L26 OR L27 OR L28 OR L33) NOT L35  
L37 38 S L36 AND 1840-2003/PY,PRY  
L38 49 S L25 NOT (L35 OR L37)  
L39 42 S L38 AND 1840-2002/PY,PRY  
L40 5 S L39 AND GALVAN?  
L41 37 S L39 NOT L40

=> FILE HCA

FILE 'HCA' ENTERED ON 25 AUG 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> D L35 1-2 CBIB ABS HITSTR HITIND

L35 ANSWER 1 OF 2 HCA COPYRIGHT 2006 ACS on STN  
140:410202 Steel or galvanized steel sheets coated

with a layer of zinc or zinc alloy containing a polymer by electrodeposition. Petitjean, Jacques; Jacqueson, Eric; Arnoux, Claude; Durand, Guy; Sliviack, Joseph (Usinor, Fr.). Fr. Demande FR 2847275 A1 20040521, 18 pp. (French). CODEN: FRXXBL. APPLICATION: FR 2002-14421 20021119.

AB Steel or galvanized steel sheets are electroplated on  $\geq 1$  side with a Zn or Zn alloy layer contg. 0.15-1.0 wt.% polymer including 6-150 identical or different motives having a general formula - (CH<sub>2</sub>C(R)(CONH<sub>2</sub>)) - (R = H, Me) and optionally contg. polyallyl motives. The Zn layer contg. polymer is in turn covered with an org. top coating from a group of polyurethanes, epoxy resins, and/or polyesters optionally contg. elec. conductive particles (e.g., Zn). The electrodeposition is carried out in a sulfate bath at a c.d. of 60-160 A/dm<sup>2</sup> and 30-70°. The procedure is suitable for manuf. of automobile bodies.

IT 7440-66-6, Zinc, processes 9003-05-8,  
Polyacrylamide

(electrodeposition of zinc or zinc alloy contg. polymer on steel or galvanized steel sheet)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

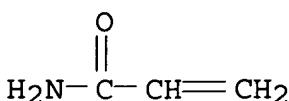
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C<sub>3</sub> H<sub>5</sub> N O



IT 12597-69-2, Steel, uses

(steel or galvanized steel sheets coated with layer of zinc or zinc alloy contg. polymer by electrodeposition)

RN 12597-69-2 HCA  
CN Steel (9CI) (CA INDEX NAME)  
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
IC ICM C23C030-00  
      ICS C25D003-22; B05D003-10  
CC 55-6 (Ferrous Metals and Alloys)  
      Section cross-reference(s): 42  
ST zinc polymer electrodeposition **steel** sheet;  
      **automobile** body sheet zinc polymer electrodeposition;  
      polymer coating **automobile** body sheet  
IT Automobiles  
      (bodies; **steel** or galvanized **steel** sheets  
      coated with layer of zinc or zinc alloy contg. polymer by  
      electrodeposition and polymer top coating)  
IT Polymers, processes  
      (electrodeposition of zinc or zinc alloy contg. polymer on  
      **steel** or galvanized **steel** sheet)  
IT Coating process  
      (of zinc or zinc alloy coating contg. polymer on **steel**  
      or galvanized **steel** sheet with polymers)  
IT Electrodeposition  
      (of zinc or zinc alloy contg. polymer on **steel** or  
      galvanized **steel** sheet)  
IT Galvanized **steel**  
      (**steel** or galvanized **steel** sheets coated with  
      layer of zinc or zinc alloy contg. polymer by electrodeposition)  
IT Epoxy resins, uses  
Polyesters, uses  
Polyurethanes, uses  
      (top coating on zinc or zinc alloy coating contg. polymer on  
      **steel** or galvanized **steel** sheet)  
IT Electrodeposits  
      (zinc or zinc alloy contg. polymer on **steel** or  
      galvanized **steel** sheet)  
IT Zinc alloy, base  
      (electrodeposition of zinc or zinc alloy contg. polymer on  
      **steel** or galvanized **steel** sheet)  
IT 7440-66-6, Zinc, processes 9003-05-8,  
Polyacrylamide  
      (electrodeposition of zinc or zinc alloy contg. polymer on  
      **steel** or galvanized **steel** sheet)  
IT 12597-69-2, Steel, uses

(**steel** or galvanized **steel** sheets coated with layer of zinc or zinc alloy contg. polymer by electrodeposition)  
 IT 688355-45-5, Granocoat LC 688356-59-4, Bonazinc 3005  
 (top coating on zinc or zinc alloy coating contg. polymer on **steel** or galvanized **steel** sheet)

L35 ANSWER 2 OF 2 HCA COPYRIGHT 2006 ACS on STN  
 104:215278 Manufacture of zinc-iron type alloy electroplated **steel** sheets having excellent color tone appearance.  
 Kiyono, Itsusho; Honjo, Toru; Yamato, Koji; Ichida, Toshiro (Kawasaki Steel Corp., Japan). Jpn. Kokai Tokkyo Koho JP 61030695  
 A2 19860212 Showa, 5 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1984-151074 19840720.

AB **Steel** plates are electroplated in a bath contg.  $\geq 0.5$  M and less than the satn. concn. of  $Zn^{2+} + Fe^{2+}$ , having mol concn. ratio  $0.1 \leq [Fe^{2+}/(Fe^{2+} + Zn^{2+})] \leq 0.5$ , and 0.01-50 g/L of  $\geq 1$  selected from substituted polyethers, aryl ketones, aryl aldehydes, aryl olefin ketones, aryl olefin aldehydes, nicotinic acids, arylsulfonic acids, poly(vinyl alcs.), polyacrylic acids, and quaternary alkyl ammonium salts at 20-200 A/dm<sup>2</sup> to give Zn-Fe alloy platings having excellent color tone appearances. The bath may contain  $\geq 100$  g/L KCl, NH<sub>4</sub>Cl, NaCl, CaCl<sub>2</sub>, and/or MgCl<sub>2</sub> as cond. assistants and have pH 1.0-5.0. The plates having excellent corrosion resistance are esp. useful for automobile bodies. Thus, a **steel** plate was treated in pH 3.0 and 55° bath contg. FeCl<sub>2</sub>.nH<sub>2</sub>O 60, ZnCl<sub>2</sub> 220, KCl 350, and polyethylene glycol 1.0 g/L at 160 A/dm<sup>2</sup> to give 20 g/m<sup>2</sup> homogeneous plate having excellent color tone appearance.

IT 37345-61-2  
 (electroplating of, on **steel** plates)

RN 37345-61-2 HCA

CN Iron alloy, nonbase, Fe, Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
=====+=====	
Fe	7439-89-6
Zn	7440-66-6

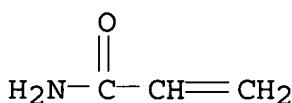
IT 9003-05-8  
 (in electroplating of iron-zinc alloy on **steel**)  
 RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C25D005-26

ICS C25D003-56

CC 72-8 (Electrochemistry)

ST zinc iron alloy electroplating; automobile body  
steel plating

IT Polyethers  
(in electroplating of iron-zinc alloy on steel)

IT Ketones, uses and miscellaneous  
(alkenyl aryl, in electroplating of iron-zinc alloy on  
steel)

IT Quaternary ammonium compounds, compounds  
(alkyl, salts, in electroplating of iron-zinc alloy on  
steel)

IT Sulfonic acids, uses and miscellaneous  
(arene, in electroplating of iron-zinc alloy on steel)

IT Aldehydes, uses and miscellaneous  
(aryl, alkenyl, in electroplating of iron-zinc alloy on  
steel)

IT Ketones, uses and miscellaneous  
(aryl, in electroplating of iron-zinc alloy on steel)

IT Aldehydes, uses and miscellaneous  
(aryl, in electroplating of iron-zinc alloy on steel)

IT Automobiles  
(bodies, iron-zinc electroplating of)

IT 37345-61-2  
(electroplating of, on steel plates)

IT 59-67-6, uses and miscellaneous 98-92-0 100-52-7, uses and  
miscellaneous 104-55-2 121-33-5 1112-67-0 1321-69-3  
7447-40-7, uses and miscellaneous 7647-14-5, uses and  
miscellaneous 7786-30-3, uses and miscellaneous 9002-89-5

9003-01-4 9003-05-8 10043-52-4, uses and miscellaneous  
12125-02-9, uses and miscellaneous 25322-68-3  
(in electroplating of iron-zinc alloy on **steel**)  
IT 102416-15-9  
(in electroplating of iron-zinc alloy on **steel**)

=> D HIS L42-

FILE 'HCA' ENTERED ON 25 AUG 2006  
L42 26 S L37 AND (L1 OR L2)  
L43 12 S L37 NOT L42  
L44 25 S L41 AND (L1 OR L2)

=> D L42 1-26 CBIB ABS HITSTR HITIND

L42 ANSWER 1 OF 26 HCA COPYRIGHT 2006 ACS on STN  
143:98237 Flame-resistant composition based on a thermoplastic matrix.  
Couillens, Xavier; Amorese, Michelangelo (Rhodia Engineering  
Plastics S.R.L., Italy). PCT Int. Appl. WO 2005061606 A1 20050707,  
20 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB,  
BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC,  
EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG,  
SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,  
ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI,  
FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD,  
TG, TR. (French). CODEN: PIXXD2. APPLICATION: WO 2004-FR3281  
20041217. PRIORITY: FR 2003-14991 20031219; FR 2004-180 20040109.

AB Fireproofing compns. for thermoplastics contain (A) [R1R2P(O)O]<sub>z</sub>Mz+  
(R1, R2 = C1-6 alkyl or aryl, M = Ca, Mg, Al, or Zn, z = 2 or 3),  
(B) reaction product of H<sub>3</sub>PO<sub>4</sub> and melamine and(or) of H<sub>3</sub>PO<sub>4</sub> and  
melamine condensate, and (C) melamine condensate (such as melem)  
with the content of (A) and (B) being  $\geq 13\%$  of the compn. The  
presence of (C) improves the fireproofing ability of (A) and (B).  
IT 7440-66-6D, Zinc, dialkylphosphinate salts  
(fireproofing agents contg. phosphinic acid metal salts and  
melamine derivs. for thermoplastics)  
RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8 25038-54-4, Poly[imino(1-oxo-1,6-hexanediyl)], uses 25212-74-2, Poly(thio-1,4-phenylene) (fireproofing agents contg. phosphinic acid metal salts and melamine derivs. for thermoplastics)

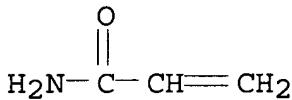
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

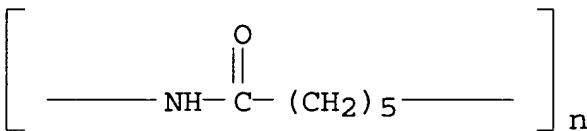
CRN 79-06-1

CMF C3 H5 N O



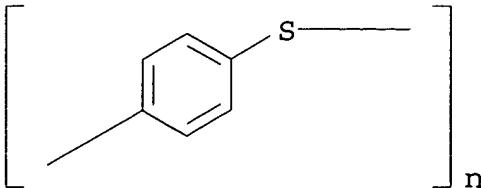
RN 25038-54-4 HCA

CN Poly[imino(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



RN 25212-74-2 HCA

CN Poly(thio-1,4-phenylene) (9CI) (CA INDEX NAME)



IC ICM C08K005-5313

ICS C08K005-3492  
CC 37-6 (Plastics Manufacture and Processing)  
IT Polyamides, uses  
Polycarbonates, uses  
**Polyesters**, uses  
Polyimides, uses  
Polyketones  
Polyolefins  
Polyoxymethylene, uses  
Polyoxyphenylenes  
Polysulfones, uses  
Polythiophenylenes  
Polyureas  
**Polyurethanes**, uses  
(fireproofing agents contg. phosphinic acid metal salts and  
melamine derivs. for thermoplastics)  
IT **Polyesters**, uses  
(polycarbonate-; fireproofing agents contg. phosphinic acid metal  
salts and melamine derivs. for thermoplastics)  
IT Polycarbonates, uses  
(polyester-; fireproofing agents contg. phosphinic acid  
metal salts and melamine derivs. for thermoplastics)  
IT 108-78-1D, 1,3,5-Triazine-2,4,6-triamine, polyphosphoric acid salts  
1502-47-2D, polyphosphate salts 3283-12-3D, metal salts  
3576-88-3 3576-88-3D, polyphosphate salts 7439-95-4D, Magnesium,  
dialkylphosphinate salts 7440-66-6D, Zinc,  
dialkylphosphinate salts 7440-70-2D, Calcium, dialkylphosphinate  
salts 32518-77-7 41583-09-9 51528-32-6D, metal salts  
73342-45-7D, metal salts 225789-38-8  
(fireproofing agents contg. phosphinic acid metal salts and  
melamine derivs. for thermoplastics)  
IT 79-10-7D, 2-Propenoic acid, esters, polymers 79-41-4D, esters,  
polymers 9002-81-7, Poly(oxymethylene) 9002-86-2 9002-88-4  
9002-89-5 **9003-05-8** 9003-07-0 9003-17-2 9003-20-7  
9003-27-4 9003-29-6 9003-53-6 9003-54-7 9003-55-8  
9008-66-6 9010-79-1 9010-98-4 9011-13-6 24936-41-2  
24936-74-1 24937-16-4, Poly[imino(1-oxo-1,12-dodecanediyl)]  
24938-56-5, Poly[imino(1-oxo-1,4-butanediyl)] 24938-70-3  
24938-73-6 24968-12-5 25014-31-7 25014-41-9 25035-04-5,  
Poly[imino(1-oxo-1,11-undecanediyl)] **25038-54-4**,  
Poly[imino(1-oxo-1,6-hexanediyl)], uses 25038-59-9, uses  
**25212-74-2**, Poly(thio-1,4-phenylene) 25668-34-2

25805-74-7 28757-63-3 32168-30-2 50327-22-5 211060-88-7  
 (fireproofing agents contg. phosphinic acid metal salts and  
 melamine derivs. for thermoplastics)

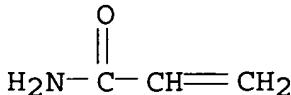
L42 ANSWER 2 OF 26 HCA COPYRIGHT 2006 ACS on STN  
 143:79073 Flame-resistant composition based on a thermoplastic matrix.  
 Amorese, Michelangelo; Couillens, Xavier (Rhodia Enginnering  
 Plastics, Italy). Fr. Demande FR 2864097 A1 20050624, 18 pp.  
 (French). CODEN: FRXXBL. APPLICATION: FR 2003-14991 20031219.  
 AB Fireproofing compns. for thermoplastics contain (A) [R1R2P(O)O]<sub>z</sub>M<sub>z+</sub>  
 (R<sub>1</sub>, R<sub>2</sub> = C<sub>1</sub>-6 alkyl or aryl, M = Ca, Mg, Al, or Zn, z = 2 or 3),  
 (B) reaction product of H<sub>3</sub>PO<sub>4</sub> and melamine and(or) of H<sub>3</sub>PO<sub>4</sub> and  
 melamine condensate, and (C) melamine condensate (such as melem)  
 with the content of (A) and (B) being ≥13% of the compn. The  
 presence of (C) improves the fireproofing ability of (A) and (B).  
 IT 7440-66-6D, Zinc, dialkylphosphinate salts  
 (fireproofing agents contg. phosphinic acid metal salts and  
 melamine derivs. for thermoplastics)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8, Polyacrylamide 25038-54-4,  
 Nylon 6, uses 25212-74-2, Poly(phenylene sulfide)  
 (fireproofing agents contg. phosphinic acid metal salts and  
 melamine derivs. for thermoplastics)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

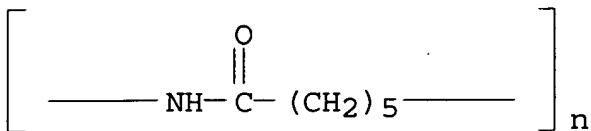
CM 1

CRN 79-06-1  
 CMF C<sub>3</sub> H<sub>5</sub> N O



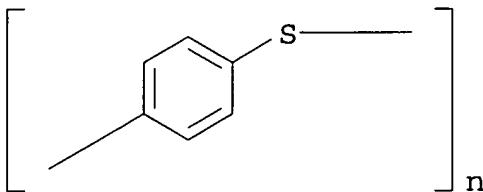
RN 25038-54-4 HCA

CN Poly[imino(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



RN 25212-74-2 HCA

CN Poly(thio-1,4-phenylene) (9CI) (CA INDEX NAME)



IC ICM C08K005-49

ICS C08L077-00; C08K005-16; C08K005-52; C08K005-5313; H01B003-30

CC 37-6 (Plastics Manufacture and Processing)

IT Polyamides, uses

Polycarbonates, uses

**Polyesters**, uses

Polyimides, uses

Polyketones

Polyolefins

Polyoxymethylenes, uses

Polyoxyphenylenes

Polysulfones, uses

Polythiophenylenes

Polyureas

**Polyurethanes**, uses

(fireproofing agents contg. phosphinic acid metal salts and  
melamine derivs. for thermoplastics)

IT **Polyesters**, uses

(polycarbonate-; fireproofing agents contg. phosphinic acid metal  
salts and melamine derivs. for thermoplastics)

IT Polycarbonates, uses

(**polyester**-; fireproofing agents contg. phosphinic acid  
metal salts and melamine derivs. for thermoplastics)

IT 108-78-1D, Melamine, polyphosphoric acid salts 1502-47-2D, Melem,

polyphosphate salts 3283-12-3D, Dimethylphosphinic acid, metal salts 3576-88-3, Melam 3576-88-3D, Melam, polyphosphate salts 7439-95-4D, Magnesium, dialkylphosphinate salts 7440-66-6D, Zinc, dialkylphosphinate salts 7440-70-2D, Calcium, dialkylphosphinate salts 32518-77-7, Melon 41583-09-9, Melamine phosphate 51528-32-6D, Ethylmethylphosphinic acid, metal salts 73342-45-7D, Methylpropylphosphinic acid, metal salts 225789-38-8, Aluminum diethylphosphinate

(fireproofing agents contg. phosphinic acid metal salts and melamine derivs. for thermoplastics)

IT 79-10-7D, Acrylic acid, esters, polymers 79-41-4D, Methacrylic acid, esters, polymers 9002-81-7, Poly(oxymethylene) 9002-86-2, PVC 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-20-7, Polyvinyl acetate 9003-27-4, Polyisobutylene 9003-29-6, Polybutylene 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer 9003-55-8, Butadiene-styrene copolymer 9008-66-6, Nylon 610 9010-79-1, Ethylene-propylene copolymer 9010-98-4, Polychloroprene 9011-13-6, Maleic anhydride-styrene copolymer 9011-52-3 24936-41-2, Poly(p-methylstyrene) 24936-74-1, Nylon 612 24937-16-4, Nylon 12 24938-56-5, Nylon 4 24938-70-3, Nylon 6T 24938-73-6, Nylon 9T 24968-12-5, Polybutylene terephthalate 25014-31-7, Poly( $\alpha$ -methylstyrene) 25014-41-9, Polyacrylonitrile 25035-04-5, Nylon 11 25038-54-4, Nylon 6, uses 25038-59-9, PET polymer, uses 25212-74-2, Poly(phenylene sulfide) 25668-34-2, Nylon 6I 25805-74-7, Nylon MXD6 26098-55-5 28757-63-3, Nylon 69 32168-30-2, Nylon 618 50327-22-5, Nylon 46 211060-88-7, Nylon 6/36  
(fireproofing agents contg. phosphinic acid metal salts and melamine derivs. for thermoplastics)

L42 ANSWER 3 OF 26 HCA COPYRIGHT 2006 ACS on STN

139:246997 Use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoters or as protecting agents against the corrosion of a metallic surface. Destarac, Mathias; Bonnet-Gonnet, Cecile; Cadix, Arnaud (Rhodia Chimie, Fr.). PCT Int. Appl. WO 2003076529 A1 20030918, 43 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU,

SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (French). CODEN: PIXXD2. APPLICATION: WO 2003-FR788 20030312. PRIORITY: FR 2002-3111 20020313.

AB The invention relates to the use of a block copolymer having at least one block that comprises phosphate and/or phosphonate functions in order to produce a deposit on a metallic surface, such as a **steel** or aluminum surface, which can be used, for example, to improve the effectiveness of the subsequent application of a film-forming compn. on the thus altered surface or to protect the metallic surface against corrosion. The invention also relates to a method of applying paint or mastic compns. to a metallic surface, which involves the above-mentioned inventive use of said block copolymers, and the coated metallic materials that can be produced using said application method. A typical block copolymer was manufd. by polymn. of acrylamide (50 g 50% aq. soln.) 5 h at 70° in an aq. Me<sub>2</sub>CO soln. in the presence of 4,4-azobis(4-cyanovaleric acid) (I) and O-ethyl-S-[(1-methoxycarbonyl)ethyl] xanthate and polymn. of 1.32 g vinylphosphonic acid and 7.14 g acrylic acid at 70° in the resulting soln., with the addn. of more I.

IT 599179-05-2, R46, miscellaneous  
(R46 and R46i, substrate; use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoting primers or as protecting agents against corrosion of metallic surfaces)

RN 599179-05-2 HCA

CN Steel, (R46) (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9003-05-8P, **Polyacrylamide**  
(block copolymer precursor; use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoting primers or as protecting agents against corrosion of metallic surfaces)

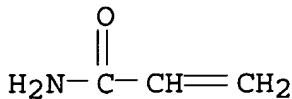
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, miscellaneous 12597-68-1,  
 Stainless **steel**, miscellaneous  
 (substrates; use of block copolymers bearing phosphate and/or  
 phosphonate functions as adhesion promoting primers or as  
 protecting agents against corrosion of metallic surfaces)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 12597-68-1 HCA  
 CN Stainless steel (9CI) (CA INDEX NAME)  
 \*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 IC ICM C09D005-00  
 ICS C09D007-12; C09J153-00; C09D153-00  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55, 56  
 IT **Coating materials**  
 (anticorrosive; use of block copolymers bearing phosphate and/or  
 phosphonate functions as adhesion promoting primers or as  
 protecting agents against corrosion of metallic surfaces)  
 IT Alkali metals, miscellaneous  
 Alkaline earth metals  
 Alloys, miscellaneous  
 Galvanized **steel**  
 Metals, miscellaneous  
 Oxides (inorganic), miscellaneous  
 Transition metals, miscellaneous  
 (substrates; use of block copolymers bearing phosphate and/or  
 phosphonate functions as adhesion promoting primers or as  
 protecting agents against corrosion of metallic surfaces)  
 IT **Polyurethanes**, uses  
 (top coatings; use of block copolymers bearing phosphate and/or  
 phosphonate functions as adhesion promoting primers or as  
 protecting agents against corrosion of metallic surfaces)

IT 599179-05-2, R46, miscellaneous  
(R46 and R46i, substrate; use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoting primers or as protecting agents against corrosion of metallic surfaces)

IT 9003-05-8P, Polyacrylamide 9003-49-0P, Polybutyl acrylate  
(block copolymer precursor; use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoting primers or as protecting agents against corrosion of metallic surfaces)

IT 7439-89-6, Iron, miscellaneous 7439-92-1, Lead, miscellaneous  
7440-08-6, Polonium, miscellaneous 7440-21-3, Silicon,  
miscellaneous 7440-22-4, Silver, miscellaneous 7440-28-0,  
Thallium, miscellaneous 7440-31-5, Tin, miscellaneous 7440-36-0,  
Antimony, miscellaneous 7440-38-2, Arsenic, miscellaneous  
7440-50-8, Copper, miscellaneous 7440-55-3, Gallium, miscellaneous  
7440-56-4, Germanium, miscellaneous 7440-66-6, Zinc,  
miscellaneous 7440-68-8, Astatine, miscellaneous 7440-69-9,  
Bismuth, miscellaneous 7440-74-6, Indium, miscellaneous  
**12597-68-1**, Stainless steel, miscellaneous  
12597-70-5, Bronze 12597-71-6, Brass, miscellaneous 13494-80-9,  
Tellurium, miscellaneous 56802-58-5, Duraluminum  
(substrates; use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoting primers or as protecting agents against corrosion of metallic surfaces)

L42 ANSWER 4 OF 26 HCA COPYRIGHT 2006 ACS on STN

139:246937 Use of block copolymers bearing phosphate and/or phosphonate functions as adhesion promoters or as protecting agents against the corrosion of a metallic surface. Destarac, Mathias; Bonnet-Gonnet, Cecile; Cadix, Arnaud (Rhodia Chimie, Fr.). PCT Int. Appl. WO 2003076531 A1 **20030918**, 41 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (French). CODEN: PIXXD2. APPLICATION: WO 2003-FR803 20030313. PRIORITY: FR 2002-3110 20020313.

AB The invention relates to the use of a block copolymer having at least one block that comprises phosphate and/or phosphonate functions, as an additive for film-forming compns., such as paint, latex, or mastic which is optionally siliconized in order to ensure or promote the adhesion of the aforementioned compns. on a metallic surface or to protect said metallic surface against corrosion. A typical block copolymer was manufd. by polymn. of acrylamide (50 g 50% aq. soln.) 5 h at 70° in an aq. Me<sub>2</sub>CO soln. in the presence of 4,4-azobis(4-cyanovaleric acid) (I) and O-ethyl-S-[(1-methoxycarbonyl)ethyl] xanthate and polymn. of 1.32 g vinylphosphonic acid and 7.14 g acrylic acid at 70° in the resulting soln., with the addn. of more I.

IT 599179-05-2, R46, miscellaneous

(R-46, substrate; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters or as protecting agents against the corrosion of metallic surfaces)

RN 599179-05-2 HCA

CN Steel, (R46) (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9003-05-8P, Polyacrylamide

(block copolymer precursor; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters or as protecting agents against the corrosion of metallic surfaces)

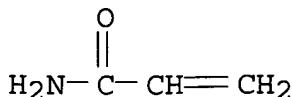
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C<sub>3</sub> H<sub>5</sub> N O



IT 7440-66-6, Zinc, miscellaneous 12597-68-1,  
Stainless steel, miscellaneous

(substrates; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters

or as protecting agents against the corrosion of metallic surfaces)

RN 7440-66-6 HCA  
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 12597-68-1 HCA  
CN Stainless steel (9CI) (CA INDEX NAME)  
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
IC ICM C09D007-12  
      ICS C09J153-00; C09D153-00  
CC 42-5 (Coatings, Inks, and Related Products)  
      Section cross-reference(s): 55, 56  
IT **Polyurethanes**, uses  
      (acrylic, paint binder; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters or as protecting agents against the corrosion of metallic surfaces)  
IT Alkali metals, miscellaneous  
Alkaline earth metals  
Alloys, miscellaneous  
Galvanized **steel**  
Oxides (inorganic), miscellaneous  
Transition metals, miscellaneous  
      (substrates; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters or as protecting agents against the corrosion of metallic surfaces)  
IT **599179-05-2**, R46, miscellaneous  
      (R-46, substrate; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters or as protecting agents against the corrosion of metallic surfaces)  
IT **9003-05-8P**, **Polyacrylamide** 9003-49-0P, Polybutyl acrylate 444018-48-8P, Butyl acrylate-2-hydroxyethyl acrylate-2-hydroxyethyl methacrylate-methyl methacrylate-styrene copolymer  
      (block copolymer precursor; use of block copolymers bearing phosphate and/or phosphonate functions in paints and mastics as adhesion promoters or as protecting agents against the corrosion

of metallic surfaces)

IT 7439-89-6, Iron, miscellaneous 7439-92-1, Lead, miscellaneous  
 7440-08-6, Polonium, miscellaneous 7440-21-3, Silicon,  
 miscellaneous 7440-22-4, Silver, miscellaneous 7440-28-0,  
 Thallium, miscellaneous 7440-31-5, Tin, miscellaneous 7440-36-0,  
 Antimony, miscellaneous 7440-38-2, Arsenic, miscellaneous  
 7440-50-8, Copper, miscellaneous 7440-55-3, Gallium, miscellaneous  
 7440-56-4, Germanium, miscellaneous 7440-66-6, Zinc,  
 miscellaneous 7440-68-8, Astatine, miscellaneous 7440-69-9,  
 Bismuth, miscellaneous 7440-74-6, Indium, miscellaneous  
**12597-68-1**, Stainless **steel**, miscellaneous  
 12597-70-5, Bronze 12597-71-6, Brass, miscellaneous 13494-80-9,  
 Tellurium, miscellaneous 56802-58-5, Duraluminum  
 (substrates; use of block copolymers bearing phosphate and/or  
 phosphonate functions in paints and mastics as adhesion promoters  
 or as protecting agents against the corrosion of metallic  
 surfaces)

L42 ANSWER 5 OF 26 HCA COPYRIGHT 2006 ACS on STN

138:371442 Non-flowable antiseize lubricant formulations dispensable at  
 >120°F containing solid lubricants and carrier fluids.

Patel, Prakash S.; Attarwala, Shabbir (Henkel Loctite Corporation,  
 USA). PCT Int. Appl. WO 2003038016 A1 **20030508**, 36 pp.

DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
 BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,  
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ,  
 OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG,  
 CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML,  
 MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.

APPLICATION: WO 2002-US33142 20021017. PRIORITY: US 2001-PV330722  
 20011029; US 2002-PV386420 20020607.

AB Non-flowable anti-seize lubricants that are dimensionally stable at  
 $\geq 120^{\circ}\text{F}$  and are dispensable at room temp. without the  
 application of heat, are characterized by a Mil-907-E breakaway  
 torque of <250 ft-lb, and consist of a solid lubricants, selected  
 from metallic flakes, non-metallic lubricants, metal oxides, metal  
 hydroxides, and metal fluorides, dispersed in a carrier in an amt.  
 to render the compn. non-flowable at 120°F. Suitable  
 anti-seize lubricants are metals (e.g., Cu, Ni, Al, Pb, Zn, Cr, Mn,  
 Mo, and **steel**), metal oxides and salts (e.g., CaO, CaCO<sub>3</sub>,

CaF<sub>2</sub>, Ca stearate, Li, MoS<sub>2</sub>, ZnO, TiO<sub>2</sub>, MgO, Ca(OH)<sub>2</sub>, BaO, SnO, and BaSO<sub>4</sub>), and other compds. (e.g., BN, graphite, BN, PTFE, mica, and talc). Suitable carriers are lubricating greases (e.g., thickened by Ca, Na, Li, and Al thickeners, with ASTM D 217 penetration at 25°C of 200-400 mm), lubricating oils, polymers (e.g., polyamides, **Polyacrylamides**, polyimides, poly(hydroxyalkyl) acrylates, polyurea-urethanes, and polyester-polyamines), waxes with viscosity <200 SUS at 100°F (e.g., paraffin wax, soft paraffin wax, petrolatum, microcryst. wax, animal wax, or vegetable wax), naphthenic petroleum oils (viscosity <300 SUS at 100°F and with an API gravity of 23-25 at 60°F), and high-mol.-wt. alcs. or amines (with m.p. 170-200°F).

IT **9003-05-8, Polyacrylamide**

(carrier fluids; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)

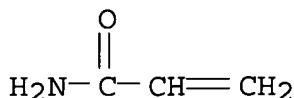
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT **7440-66-6, Zinc, uses 12597-69-2, Steel,**  
uses

(solid lubricant; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)  
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
IC ICM C10M103-00  
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)  
IT **Polyesters**, uses  
(polyamide-, carrier fluids; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)  
IT Polyamides, uses  
(polyester-, carrier fluids; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)  
IT **Polyurethanes**, uses  
(polyurea-, carrier fluids; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)  
IT Polyureas  
(polyurethane-, carrier fluids; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)  
IT 79-10-7D, Acrylic acid, hydroxyalkyl esters, polymers  
**9003-05-8, Polyacrylamide**  
(carrier fluids; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)  
IT 471-34-1, Calcium carbonate, uses 637-12-7, Aluminum stearate  
1304-28-5, Barium oxide, uses 1305-62-0, Calcium hydroxide, uses  
1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide, uses  
1314-13-2, Zinc oxide, uses 1317-33-5, Molybdenum disulfide, uses  
1332-29-2, Tin oxide 1592-23-0, Calcium stearate 7429-90-5,  
Aluminum, uses 7439-92-1, Lead, uses 7439-93-2, Lithium, uses  
7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses  
7440-02-0, Nickel, uses 7440-47-3, Chromium, uses 7440-48-4,  
Cobalt, uses 7440-50-8, Copper, uses **7440-66-6**, Zinc,  
uses 7727-43-7, Barium sulfate 7782-42-5, Graphite, uses  
7789-75-5, Calcium fluoride, uses 9002-84-0, PTFE 10043-11-5,  
Boron nitride, uses 10377-48-7, Lithium sulfate **12597-69-2**,  
Steel, uses 13463-67-7, Titanium dioxide, uses  
14807-96-6, Talc, uses  
(solid lubricant; non-flowable antiseize lubricant formulations dispensible at >120°F contg. solid lubricants and carrier fluids)

L42 ANSWER 6 OF 26 HCA COPYRIGHT 2006 ACS on STN

138:370416 Surface-treating agents for metal materials and their treating method. Tanaka, Kazuya; Shimizu, Akio; Morita, Ryoji (Nihon Parkerizing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003138382 A2 20030514, 9 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 2001-382635 20011217. PRIORITY: JP 2000-393936 20001226; JP 2001-255049 20010824.

AB The surface-treating agent compn. (pH 1.5-6.0) having good adhesion between metals and films and corrosion and solvent resistance, comprises an aminated phenolic resin, and  $\geq 1$  metal compd. selected from Ti, Zr, Hr, Mo, W, Se, Ce, Fe, Cu, Zn, V and Cr (III). Thus, an aluminum alloy plate was applied with a treating agent contg. dimethylaminomethyl-substituted phenol-formaldehyde copolymer 10 g/L and zirconium fluoride 5.0 g/L, and dried at 200°, showing good adhesive, and corrosion and solvent resistance.

IT 12597-69-2, Steel, miscellaneous  
(substrate; surface-treating agents for metals with good adhesion and corrosion and solvent resistance)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 7440-66-6, Zinc, uses  
(surface-treating agents for metals with good adhesion and corrosion and solvent resistance)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8, Polyacrylamide  
(surface-treating agents for metals with good adhesion and corrosion and solvent resistance)

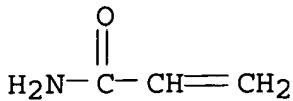
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C23C022-24  
 ICS C09D005-00; C09D133-00; C09D161-06; C23C022-00; C23C022-06;  
 C23C022-40; C23C022-52; C23C022-56; C23C022-57

CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55, 56

IT **Coating process**  
 (surface-treating agents for metals with good adhesion and  
 corrosion and solvent resistance)

IT **12597-69-2, Steel, miscellaneous**  
 (substrate; surface-treating agents for metals with good adhesion  
 and corrosion and solvent resistance)

IT 7439-89-6, Iron, uses 7439-98-7, Molybdenum, uses 7440-32-6,  
 Titanium, uses 7440-33-7, Wolfram, uses 7440-45-1, Cerium, uses  
 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-58-6,  
 Hafnium, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc,  
 uses 7440-67-7, Zirconium, uses 7782-49-2, Selenium, uses  
 7782-91-4, Molybdic acid 7783-64-4, Zirconium fluoride  
 13548-38-4, Chromium nitrate 17309-53-4, Cerium nitrate  
 (surface-treating agents for metals with good adhesion and  
 corrosion and solvent resistance)

IT **9003-05-8, Polyacrylamide** 9003-35-4D,  
 Phenol-formaldehyde copolymer, dimethylaminomethyl derivs.  
 25085-03-4, Acrylamide-methacrylic acid copolymer 25085-75-0D,  
 Bisphenol A-formaldehyde copolymer, amino derivs.

(surface-treating agents for metals with good adhesion and  
 corrosion and solvent resistance)

L42 ANSWER 7 OF 26 HCA COPYRIGHT 2006 ACS on STN

137:13033 Fast-switching reversible electrochemical mirror (REM).  
 Tench, D. Morgan; Warren, Leslie F., Jr.; Rowell, Petra V.  
 (Innovative Technology Licensing, Llc, USA). U.S. US 6400491 B1  
 20020604, 17 pp., Cont.-in-part of U. S. 6,111,685.  
 (English). CODEN: USXXAM. APPLICATION: US 2000-619127 20000718.  
 PRIORITY: US 1997-994412 19971219; US 1999-333385 19990615; US  
 1999-356730 19990719.

AB Reversible electrochem. mirrors (REMs) are described which comprise  
 first and second electrodes,  $\geq 1$  of which is substantially

transparent to at least a portion of the spectrum of electromagnetic radiation and on  $\geq 1$  of which atoms of an electrodepositable metal are disposed, in contact with an electrolytic soln. comprising a nonaq. solvent contg. ions of the electrodepositable metal  $>0.5$  M and halide and/or pseudohalide anions having a total molar concn. ratio of at least 2:1 relative to the concn. of the electrodepositable metal cations. Elec. potential applied to the electrodes causes deposited metal to be dissolved from one electrode into the electrolytic soln. and to be deposited from the soln. onto the other electrode, thereby affecting the reflectivity of the REM device for electromagnetic radiation (e.g., depending on the potential, a mirror deposit may be formed or removed). A surface modification layer may be applied to the electrode(s) (e.g., to ensure uniform nucleation). The high molar concn. of mirror metal cations attained in essentially nonaq. solvents by use of at least a 2:1 molar ratio of halide and/or pseudohalide anions to electrodepositable metal ions in the electrolyte provides the fast switching speed, inherent electrolyte stability, high deposit quality, good deposit erasure and long cycle life needed for practical applications. Increases above this 2:1 molar ratio may be required to optimize the device performance.

IT 7440-66-6, Zinc., uses 9003-05-8,  
**Polyacrylamide 12597-68-1, Stainless steel**  
, uses  
(fast-switching reversible electrochem. mirrors)

RN 7440-66-6 HCA

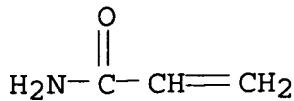
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 9003-05-8 HCA  
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
CMF C3 H5 N O



RN 12597-68-1 HCA  
CN Stainless steel (9CI) (CA INDEX NAME)  
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
IC ICM G02F001-153  
INCL 359270000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s) : 72  
IT Acrylic polymers, uses  
Bromides, uses  
Chlorides, uses  
Fluoropolymers, uses  
Halides  
Iodides, uses  
Ionomers  
Polyamides, uses  
Polycarbonates, uses  
**Polyesters**, uses  
**Urethanes**  
(fast-switching reversible electrochem. mirrors)  
IT **Polyesters**, uses  
(polycarbonate-; fast-switching reversible electrochem. mirrors)  
IT Polycarbonates, uses  
(**polyester**-; fast-switching reversible electrochem. mirrors)  
IT 67-68-5, Dimethylsulfoxide, uses 68-12-2, Dimethylformamide, uses  
96-48-0,  $\gamma$ -Butyrolactone 107-21-1, Ethylene glycol, uses  
1312-43-2, Indium oxide 1333-74-0D, Hydrogen, halides 7429-90-5,  
Aluminum, uses 7439-88-5, Iridium, uses 7439-92-1, Lead, uses  
7439-95-4D, Magnesium, halides 7439-97-6, Mercury, uses  
7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-04-2,  
Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum,  
uses 7440-09-7D, Potassium, halides 7440-15-5, Rhenium, uses  
7440-16-6, Rhodium, uses 7440-17-7D, Rubidium, halides  
7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-24-6D,  
Strontium, halides 7440-28-0, Thallium, uses 7440-31-5, Tin,

uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-39-3D, Barium, halides 7440-43-9, Cadmium, uses 7440-46-2D, Cesium, halides 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-58-6, Hafnium, uses 7440-66-6, Zinc., uses 7440-67-7, Zirconium, uses 7440-69-9, Bismuth, uses 7440-70-2D, Calcium, halides 7440-74-6, Indium, uses 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7681-82-5, Sodium iodide, uses 7783-96-2, Silver iodide 7785-23-1, Silver bromide 9002-86-2, Polyvinylchloride 9002-89-5, Polyvinylalcohol 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-39-8, Polyvinylpyrrolidone 9003-53-6 9003-54-7, Styreneacrylonitrile copolymer 9003-55-8, Styrenebutadiene copolymer 9003-56-9, Acrylonitrile-butadiene-styrene copolymer 9004-34-6D, Cellulose, derivs. 9011-14-7, Polymethylmethacrylate 12597-68-1, Stainless steel , uses 12673-86-8, Antimony tin oxide 24937-79-9, Poly(vinylidene fluoride) 25014-41-9, Polyacrylonitrile 25038-59-9, Polyethylene terephthalate, uses 37275-76-6, Aluminum zinc oxide 50926-11-9, Indium tin oxide 72779-38-5, Aluminum tin oxide 98743-33-0, Tin fluoride oxide 110320-40-6, Polypropylene carbonate 117944-65-7, Indium zinc oxide. 174559-04-7, Indium fluoride oxide 209400-79-3, Phosphorus tin oxide

(fast-switching reversible electrochem. mirrors)

L42 ANSWER 8 OF 26 HCA COPYRIGHT 2006 ACS on STN

136:405475 Corrosion inhibition of metal surfaces by using aerosols.

Ruesse, Steffen (Henkel Kommanditgesellschaft Auf Aktien, Germany).

PCT Int. Appl. WO 2002046496 A2 20020613, 9 pp.

DESIGNATED STATES: W: BR, CA, JP, KR, MX, PL, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR.

(German). CODEN: PIXXD2. APPLICATION: WO 2001-EP13786 20011127.

PRIORITY: DE 2000-10060530 20001206.

AB The invention relates to a method for inhibiting the corrosion of metal surfaces, which come into contact with moist waste gases. The method consists of adding corrosion inhibitors to the waste gases in the form of an aerosol. The metal surfaces are preferably waste gas ducts attached to lacquer spray chambers.

IT 7440-66-6, Zinc, processes 11109-50-5, DIN 1.4301

12597-68-1, Stainless steel, processes

12597-69-2, Steel, processes

(corrosion inhibition of metal surfaces by using aerosols)

RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 11109-50-5 HCA  
 CN Iron alloy, base, Fe 66-74, Cr 18.00-20.00, Ni 8.00-10.50, Mn 0-2.00, Si 0-1.00, C 0-0.08, P 0-0.045, S 0-0.030 (UNS S30400) (9CI) (CA INDEX NAME)

Component	Component	Component	
	Percent	Registry Number	
Fe	66	- 74	7439-89-6
Cr	18.00	- 20.00	7440-47-3
Ni	8.00	- 10.50	7440-02-0
Mn	0	- 2.00	7439-96-5
Si	0	- 1.00	7440-21-3
C	0	- 0.08	7440-44-0
P	0	- 0.045	7723-14-0
S	0	- 0.030	7704-34-9

RN 12597-68-1 HCA  
 CN Stainless steel (9CI) (CA INDEX NAME)  
 \*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 RN 12597-69-2 HCA  
 CN Steel (9CI) (CA INDEX NAME)  
 \*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 IT 7440-66-6D, Zinc, compds.  
     (in aerosol for corrosion inhibition of metal surfaces)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

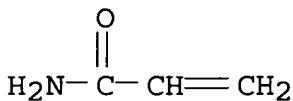
IT 9003-05-8, Polyacrylamide  
     (partially saponified; in aerosol for corrosion inhibition of metal surfaces)  
 RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C23F011-02

ICS C23F011-00

CC 56-10 (Nonferrous Metals and Alloys)

Section cross-reference(s): 42, 59

IT Galvanized **steel**

(corrosion inhibition of metal surfaces by using aerosols)

IT Coating process

(lacquering; corrosion inhibition of metal surfaces by using aerosols in)

IT 7429-90-5, Aluminum, processes 7440-66-6, Zinc, processes

11109-50-5, DIN 1.4301 12597-68-1, Stainless

steel, processes 12597-69-2, Steel,

processes

(corrosion inhibition of metal surfaces by using aerosols)

IT 79-10-7D, Acrylic acid, polymers 79-41-4D, Methacrylic acid, polymers 110-16-7D, Maleic acid, polymers 7439-98-7D, Molybdenum, compds. 7440-33-7D, Tungsten, compds.

7440-66-6D, Zinc, compds. 13598-36-2, Phosphonic acid

(in aerosol for corrosion inhibition of metal surfaces)

IT 9003-05-8, Polyacrylamide

(partially saponified; in aerosol for corrosion inhibition of metal surfaces)

L42 ANSWER 9 OF 26 HCA COPYRIGHT 2006 ACS on STN

136:126335 Fast-switching reversible electrochemical mirror (REM).

Tench, Morgan D.; Warren, Leslie F., Jr.; Rowell, Petra V.

(Innovative Technology Licensing, LLC, USA). PCT Int. Appl. WO

2002006884 A2 20020124, 42 pp. DESIGNATED STATES: W: BR,

CA, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT,

LU, MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO

2001-US21194 20010703. PRIORITY: US 2000-619127 20000718.

AB Reversible electrochem. mirrors comprising: a first electrode; a second electrode,  $\geq 1$  of the first and second electrodes being substantially transparent; and an electrolytic soln. disposed between and in elec. contact with the first and second electrodes are described in which the electrolytic soln. comprises an essentially nonaq. solvent, cations of an electrodedepositable mirror metal having a molar concn. greater than 0.5 M, a halide or pseudohalide compd. having cations that are not electroactive in the voltage range over which the device is operated, the ratio of the total molar concn. of halide and pseudohalide anions (where the total is the aggregate of anions originating from the halide or pseudohalide compd. and anions originating from compds. of the electrodedepositable mirror metal cations) to the total molar concn. of the electrodedepositable mirror metal cations being at least 2:1 and a plurality of atoms of the electrodedepositable mirror metal are disposed on  $\geq 1$  of the first and second electrodes. A neg. elec. potential applied to the first electrode. relative to the second electrode causes deposited metal to be dissolved from the second electrode into the soln. and to be electrodeposited from the soln. as a mirror deposit onto the first electrode, and a pos. elec. potential applied to the first electrode relative to the second electrode causes deposited metal to be dissolved from the first electrode into the soln. and electrodeposited from the soln. onto the second electrode, the amt. of deposited metal subsisting on the first electrode affecting the reflection of electromagnetic radiation by the device. A surface modification layer may be applied to the first electrode to ensure uniform nucleation so that a mirror electrodeposit having high reflectivity is obtained. The high molar concn. of mirror metal cations attained in essentially nonaq. solvents by use of at least a 2:1 molar ratio of halide and/or pseudohalide anions to electrodedepositable metal ions in the electrolyte provides the fast switching speed, inherent electrolyte stability, high deposit quality, good deposit erasure and long cycle life needed for practical applications. Increases above this 2:1 molar ratio may be required to optimize the device performance.

IT 7440-66-6, Zinc., uses 9003-05-8,

Polyacrylamide 12597-68-1, Stainless steel

, uses

(fast-switching reversible electrochem. mirrors)

RN 7440-66-6 HCA

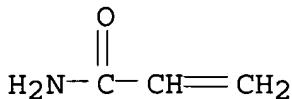
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



RN 12597-68-1 HCA  
 CN Stainless steel (9CI) (CA INDEX NAME)  
 \*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 IC ICM G02F001-00  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
     Section cross-reference(s) : 72  
 IT Acrylic polymers, uses  
     Fluoropolymers, uses  
     Fluoropolymers, uses  
     Ionomers  
     Polyamides, uses  
     Polycarbonates, uses  
         **Polyesters**, uses  
         **Urethanes**  
             (fast-switching reversible electrochem. mirrors)  
 IT **Polyesters**, uses  
     (polycarbonate-, fast-switching reversible electrochem. mirrors)  
 IT Polycarbonates, uses  
     (**polyester**-; fast-switching reversible electrochem.  
     mirrors)  
 IT 67-68-5, Dimethylsulfoxide, uses 68-12-2, Dimethylformamide, uses  
     96-48-0,  $\gamma$ -Butyrolactone 107-21-1, Ethylene glycol, uses  
     1312-43-2, Indium oxide 1344-28-1, Alumina, uses 7429-90-5,  
     Aluminum, uses 7439-88-5, Iridium, uses 7439-92-1, Lead, uses

7439-97-6, Mercury, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-43-9, Cadmium, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-58-6, Hafnium, uses 7440-66-6, Zinc., uses 7440-67-7, Zirconium, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses 7631-86-9, Silica, uses 9002-86-2, Polyvinylchloride 9002-89-5, Polyvinylalcohol 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-39-8, Polyvinylpyrrolidone 9003-53-6 9003-54-7, Styreneacrylonitrile copolymer 9003-55-8, Styrenebutadiene copolymer 9003-56-9, Acrylonitrile-butadiene-styrene copolymer 9004-34-6D, Cellulose, derivs. 9011-14-7, Polymethylmethacrylate 12597-68-1, Stainless steel, uses 12673-86-8, Antimony tin oxide 13463-67-7, Titania., uses 24937-79-9, Poly(vinylidene fluoride) 25014-41-9, Polyacrylonitrile 25038-59-9, Polyethylene terephthalate, uses 37275-76-6, Aluminum zinc oxide 50926-11-9, Indium tin oxide 72779-38-5, Aluminum tin oxide 98743-33-0, Tin fluoride oxide 110320-40-6, Polypropylenecarbonate 117944-65-7, Indium zinc oxide. 174559-04-7, Indium fluoride oxide 209400-79-3, Phosphorus tin oxide  
(fast-switching reversible electrochem. mirrors)

L42 ANSWER 10 OF 26 HCA COPYRIGHT 2006 ACS on STN

135:35689 Method for producing surface treated **steel** sheet, surface treated **steel** sheet and surface treated **steel** sheet coated with resin. Komai, Masao; Yoshikawa, Masanori; Fujimoto, Jun-ichi; Nishimura, Takao; Kanda, Katsumi (Toyo Kohan Co., Ltd., Japan). PCT Int. Appl. WO 2001042530 A1 20010614, 26 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP8789

20001213. PRIORITY: JP 1999-353648 19991213.

AB A steel sheet is dipped or electrolytically treated in a soln. contg.  $\geq 1$  of 4-valent V compd. and a pH adjusting agent or such a soln. which further contains  $\geq 1$  of a P compd. and water-sol. Mo, Ti and Zr compds. The surface-treated sheet can be further coated with resin. The sheets have excellent corrosion resistance and adhesion to an org. resin coating and can replace the conventional chromated steel sheets.

IT 7440-66-6, Zinc, uses 52308-11-9

84697-76-7

(steel plated with; surface-treated steel sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 52308-11-9 HCA

CN Aluminum alloy, base, Al 55,Zn 45 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Al	55	7429-90-5
Zn	45	7440-66-6

RN 84697-76-7 HCA

CN Zinc alloy, base, Zn 89,Ni 11 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Zn	89	7440-66-6
Ni	11	7440-02-0

IT 12597-69-2, steel, processes

(surface-treated steel sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9003-05-8, Polyacrylamide

(treatment soln. contg.; surface-treated **steel** sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

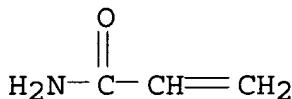
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C23C022-40

ICS C25D011-00

CC 55-6 (Ferrous Metals and Alloys)

ST **steel** surface treatment vanadium compd pH adjusting agent

IT Coating materials

(multilayer; surface-treated **steel** sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

IT Coating process

(surface-treated **steel** sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

IT Galvanized **steel**

(surface-treated **steel** sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

IT Acrylic polymers, uses

Polyurethanes, uses

(top coating contg.; surface-treated **steel** sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

IT Diphosphates

Phosphates, uses

Polyphosphates

(treatment soln. contg.; surface-treated **steel** sheet prodn. using treatment soln. contg. vanadium compd. and pH-adjusting agent)

IT 7631-86-9, Colloidal silica, uses  
(colloidal, top coating contg.; surface-treated **steel**  
sheet prodn. using treatment soln. contg. vanadium compd. and  
pH-adjusting agent)

IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-31-5,  
Tin, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses  
**52308-11-9 84697-76-7**  
(**steel** plated with; surface-treated **steel**  
sheet prodn. using treatment soln. contg. vanadium compd. and  
pH-adjusting agent)

IT **12597-69-2**, **steel**, processes  
(surface-treated **steel** sheet prodn. using treatment  
soln. contg. vanadium compd. and pH-adjusting agent)

IT 116-14-3, ethylene tetrafluoride, uses 1344-28-1, Alumina, uses  
9002-88-4 13463-67-7, Titania, uses  
(top coating contg.; surface-treated **steel** sheet prodn.  
using treatment soln. contg. vanadium compd. and pH-adjusting  
agent)

IT 506-87-6, Ammonium carbonate 7439-98-7D, Molybdenum, compds., uses  
7440-32-6D, Titanium, compds., uses 7440-67-7D, Zirconium,  
compds., uses 7632-51-1 7664-38-2, Phosphoric acid, uses  
7722-88-5, Sodium diphosphate 7783-20-2, Ammonium sulfate, uses  
**9003-05-8**, **Polyacrylamide** 10049-16-8, Vanadium  
fluoride 11098-84-3, Ammonium molybdate 12036-21-4, Vanadium  
oxide (V02) 12125-02-9, Ammonium chloride, uses 13092-66-5  
13446-24-7, Magnesium diphosphate 13825-74-6, Titanium oxysulfate  
27774-13-6 35674-39-6 36583-77-4, Ammonium titanate  
(treatment soln. contg.; surface-treated **steel** sheet  
prodn. using treatment soln. contg. vanadium compd. and  
pH-adjusting agent)

L42 ANSWER 11 OF 26 HCA COPYRIGHT 2006 ACS on STN

134:242750 Antimicrobial and anti-inflammatory endovascular  
(cardiovascular) stent. Lee, Clarence C. (USA). PCT Int. Appl. WO  
2001021229 A1 20010329, 27 pp. DESIGNATED STATES: W: AU,  
CA, CN, JP; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT,  
LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO  
2000-US40979 20000922. PRIORITY: US 1999-404577 19990923.

AB An antimicrobial and anti-inflammatory endovascular (cardiovascular)  
stent includes base material for the stent and an incorporated  
antimicrobial agent for the treatment of diseased blood vessel in  
such way that the antimicrobial agent is slowly released into the

disease blood vessel wall which is in direct contact with the stent to treat the blood vessel tissue or the plaque by both killing the disease-causing microbe(s) and relieving the inflammation. The stent can slowly release the antimicrobial and anti-inflammatory agent(s) directly to the diseased tissue or the plaque that is infected by microbes. Consequently, the inflammation is relieved by the anti-inflammatory agent and the inflammation causing microbes are controlled or killed by the antimicrobial agent. A sterile, surgical **steel**, endovascular stent is aseptically dipped into a sterile soln. of 20% benzalkonium chloride, 5% hydrocortisone and 75% ethanol soln.

IT 7440-66-6, Zinc, biological studies 9003-05-8,  
**Polyacrylamide 25038-54-4**, Poly( $\epsilon$ -  
aminocaproic acid), biological studies  
(antimicrobial and anti-inflammatory endovascular  
(cardiovascular) stent)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

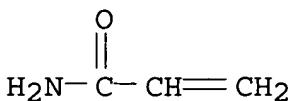
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

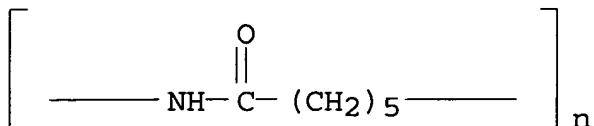
CRN 79-06-1

CMF C3 H5 N O



RN 25038-54-4 HCA

CN Poly[imino(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



IC ICM A61L031-16

CC 63-8 (Pharmaceuticals)

IT Borides

Carbides

DNA

Enzymes, biological studies

Fluoropolymers, biological studies

Lipids, biological studies

Mucopolysaccharides, biological studies

Nitrides

Oxides (inorganic), biological studies

Polyacetylenes, biological studies

Polyamides, biological studies

Polyamides, biological studies

Polycarbonates, biological studies

**Polyesters**, biological studies

Polyethers, biological studies

Polynucleotides

Polyolefins

Polyoxyalkylenes, biological studies

Polysaccharides, biological studies

Polysulfones, biological studies

**Polyurethanes**, biological studies

Polyvinyl acetals

Polyvinyl butyrals

Proteins, general, biological studies

RNA

Shape memory alloys

Silicides

Steroids, biological studies

Sulfonamides

(antimicrobial and anti-inflammatory endovascular  
(cardiovascular) stent)

IT 69-72-7D, Salicylic acid, derivs. 208-96-8D, Acenaphthylene,  
polymers 7429-90-5, Aluminum, biological studies 7439-88-5,

Iridium, biological studies 7439-89-6, Iron, biological studies  
7439-92-1, Lead, biological studies 7439-93-2, Lithium, biological  
studies 7439-95-4, Magnesium, biological studies 7439-96-5,  
Manganese, biological studies 7439-98-7, Molybdenum, biological  
studies 7440-02-0, Nickel, biological studies 7440-03-1,  
Niobium, biological studies 7440-04-2, Osmium, biological studies  
7440-05-3, Palladium, biological studies 7440-06-4, Platinum,  
biological studies 7440-08-6, Polonium, biological studies  
7440-09-7, Potassium, biological studies 7440-15-5, Rhenium,  
biological studies 7440-16-6, Rhodium, biological studies  
7440-18-8, Ruthenium, biological studies 7440-22-4, Silver,  
biological studies 7440-23-5, Sodium, biological studies  
7440-25-7, Tantalum, biological studies 7440-31-5, Tin, biological  
studies 7440-32-6, Titanium, biological studies 7440-33-7,  
Tungsten, biological studies 7440-36-0, Antimony, biological  
studies 7440-41-7, Beryllium, biological studies 7440-44-0,  
Carbon, biological studies 7440-46-2, Cesium, biological studies  
7440-47-3, Chromium, biological studies 7440-48-4, Cobalt,  
biological studies 7440-50-8, Copper, biological studies  
7440-54-2, Gadolinium, biological studies 7440-55-3, Gallium,  
biological studies 7440-57-5, Gold, biological studies  
7440-58-6, Hafnium, biological studies 7440-62-2, Vanadium,  
biological studies 7440-65-5, Yttrium, biological studies  
**7440-66-6**, Zinc, biological studies 7440-67-7, Zirconium,  
biological studies 7440-74-6, Indium, biological studies  
9002-84-0, Ptfe 9002-85-1, Polyvinylidene chloride 9002-86-2,  
Pvc 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol  
**9003-05-8**, **Polyacrylamide** 9003-07-0,  
Polypropylene 9003-17-2, Polybutadiene 9003-20-7, Polyvinyl  
acetate 9003-27-4, Polyisobutylene 9003-31-0, Polyisoprene  
9003-39-8, Pvp 9003-44-5, Polyvinyl isobutyl ether 9003-53-6,  
Polystyrene 9003-95-6, Polyvinyl stearate 9010-98-4,  
Polychloroprene 9011-14-7, Pmma 10103-46-5, Calcium phosphate  
24937-78-8, Eva 24980-41-4, Polycaprolactone 24981-14-4,  
Polyvinyl fluoride 25014-41-9, Polyacrylonitrile  
**25038-54-4**, Poly( $\epsilon$ -aminocaproic acid), biological  
studies 25067-58-7, Polyacetylene 25067-59-8, Polyvinyl  
carbazole 25104-18-1, Poly(L-lysine) 25232-41-1,  
Poly(4-vinylpyridine) 25248-42-4, Polycaprolactone 25322-68-3,  
Peg 26009-03-0, Polyglycolic acid 26023-30-3,  
Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Poly(lactic  
acid) 26124-68-5, Polyglycolic acid 38000-06-5, Poly(L-lysine)

52013-44-2, Nitinol 80181-31-3, 3-Hydroxybutyric acid-3-hydroxyvaleric acid copolymer  
 (antimicrobial and anti-inflammatory endovascular (cardiovascular) stent)

L42 ANSWER 12 OF 26 HCA COPYRIGHT 2006 ACS on STN

129:123225 Polymeric coupling agents for the adhesion of macromolecular materials and metal substrates. Roseboom, Frederick; Van der Aar, Cornelius P. J.; Bantjes, Adriaan; Feng, Minhua (Vernay Laboratories, Inc., USA). PCT Int. Appl. WO 9827120 A1 19980625, 60 pp. DESIGNATED STATES: W: CN, JP; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1997-US22657 19971211. PRIORITY: US 1996-767458 19961216.

AB Water- or alc.-sol. polymeric coupling agents for use as adhesives for dissimilar substrates, esp. rubbers with metals, incorporate within their structures co-vulcanizable groups such as alkenyl, epoxide, acrylate and/or acrylamide, and metal-complexing groups such as carboxylic, oxime, amine, hydroxamic and/or iminodiacetic groups. The availability and reactivity of polyacrylic acid, polyacrylamide and polyvinylamine make them convenient starting materials onto which co-vulcanizable groups or addnl. chelate functionality may be provided by reaction with compds. such as hydroxylamine, allyl glycidyl ether, allylamine and chloroacetic acid. Thus, treatment of polyacrylic acid with hydroxylamine hydrochloride yielded a reaction product that was an effective coupling agent when used to bond EPDM rubber to stainless steel. When the polymeric coupling agents are applied to metal surfaces they are ready to react with rubber and do not need any curing time.

IT 37373-77-6, 9SMn36, uses 39366-77-3, AlSi1Mg

54462-13-4, CuZn39Pb3

(polymeric coupling agents contg. co-vulcanizable and metal-complexing groups for adhesion of rubbers and metal substrates)

RN 37373-77-6 HCA

CN Steel, (DIN 1.0736) (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Fe	98	- 99
		7439-89-6

Mn	1.00	-	1.50	7439-96-5
S	0.32	-	0.40	7704-34-9
C	0	-	0.15	7440-44-0
P	0	-	0.100	7723-14-0
Si	0	-	0.05	7440-21-3

RN 39366-77-3 HCA

CN Aluminum alloy, base, Al 96-98, Si 0.7-1.3, Mg 0.40-0.8, Mn 0.40-0.8, Fe 0-0.50, Ti 0-0.20, Cu 0-0.10 (AA 6351) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Al	96 - 98	7429-90-5
Si	0.7 - 1.3	7440-21-3
Mg	0.40 - 0.8	7439-95-4
Mn	0.40 - 0.8	7439-96-5
Fe	0 - 0.50	7439-89-6
Ti	0 - 0.20	7440-32-6
Zn	0 - 0.20	7440-66-6
Cu	0 - 0.10	7440-50-8

RN 54462-13-4 HCA

CN Copper alloy, base, Cu 55.0-59.0, Zn 37-42, Pb 2.5-3.5, Fe 0-0.35 (UNS C38500) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	55.0 - 59.0	7440-50-8
Zn	37 - 42	7440-66-6
Pb	2.5 - 3.5	7439-92-1
Fe	0 - 0.35	7439-89-6

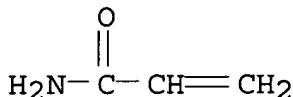
IT 9003-05-8DP, Polyacrylamide, reaction products with hydroxylamine and(or) allylamine

(polymeric coupling agents contg. co-vulcanizable and metal-complexing groups for adhesion of rubbers and metal substrates)

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
CMF C3 H5 N O

IC ICM C08F008-00  
 ICS C08F008-32; C09J004-00  
 CC 37-3 (Plastics Manufacture and Processing)  
 ST rubber metal adhesion coupling agent; polyacrylic acid deriv  
 coupling agent; **polyacrylamide** deriv coupling agent;  
 polyvinyl amine deriv coupling agent  
 IT 37373-77-6, 9SMn36, uses 39366-77-3, AlSi1Mg  
**54462-13-4**, CuZn39Pb3 57923-44-1, X12CrMoS17  
 (polymeric coupling agents contg. co-vulcanizable and  
 metal-complexing groups for adhesion of rubbers and metal  
 substrates)  
 IT 79-11-8DP, reaction products with polyvinylamine 106-92-3DP,  
 reaction products with polyacrylic acid, **polyacrylamide**  
 and polyvinylamine 107-11-9DP, Allylamine, reaction products with  
**polyacrylamide** 541-88-8DP, Chloroacetic anhydride,  
 reaction products with acrylic and vinyl compd. polymers  
 7803-49-8DP, Hydroxylamine, reaction products with polyacrylic acid,  
**polyacrylamide** and polyvinylamine, preparation  
**9003-05-8DP**, **Polyacrylamide**, reaction products  
 with hydroxylamine and(or) allylamine 26336-38-9DP,  
 Polyvinylamine, reaction products with allyl glycidyl ether and(or)  
 chloroacetic acid  
 (polymeric coupling agents contg. co-vulcanizable and  
 metal-complexing groups for adhesion of rubbers and metal  
 substrates)

L42 ANSWER 13 OF 26 HCA COPYRIGHT 2006 ACS on STN  
 129:11744 Polymer electrodes for high-power electrochemical capacitor  
 and its manufacture. Li, Changming; Jung, Richard Hanson (Motorola,  
 Inc., USA). U.S. US 5751541 A **19980512**, 12 pp.  
 (English). CODEN: USXXAM. APPLICATION: US 1995-498450 19950705.  
 AB The capacitor comprises a current-collecting substrate made of a

nonnoble metal and having at least a 1st and 2nd surface; a layer of an adhesion-enhancing material disposed on at least 1 surface of the substrate, the adhesion-enhancing material comprising a polymeric carrier contg. dispersed an adhesion-enhancing agent; a layer of an elec. conducting polymer disposed on the adhesion-enhancing material; and a layer of a polymer gel or solid electrolyte disposed on the elec. conducting polymer. The capacitor is fabricated by providing a current-collecting bipolar substrate, depositing a layer of a high surface-area adhesion-enhancing material on each surface of the substrate, depositing a layer of an elec. conducting polymer on each layer of the adhesion-enhancing material, and depositing a layer of a polymer gel or solid electrolyte atop  $\geq 1$  layer of the elec. conducting polymer.

IT 9003-05-8D, Polyacrylamide, complexes with ion conductor

(high-power electrochem. capacitor contg. layer of)

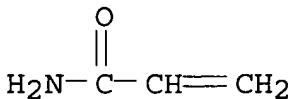
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, uses 12597-68-1, Stainless steel, uses

(high-power electrochem. capacitor contg. substrate of foil of)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 12597-68-1 HCA

CN Stainless steel (9CI) (CA INDEX NAME)

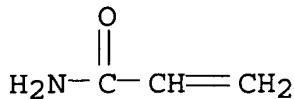
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IC ICM H01G009-02

ICS H01G009-00  
INCL 361525000  
CC 76-10 (Electric Phenomena)  
Section cross-reference(s) : 38  
IT Polyoxyalkylenes, uses  
    **Polyurethanes**, uses  
        (complexes with ion conductor; high-power electrochem. capacitor contg. layer of)  
IT 9002-89-5D, Poly(vinyl alcohol), complexes with ion conductor  
    **9003-05-8D, Polyacrylamide**, complexes with ion conductor  
        25014-15-7D, Poly(2-vinyl pyridine), complexes with ion conductor  
        25233-34-5, Polythiophene 25322-68-3D, PEO, complexes with ion conductor 30604-81-0, Polypyrrole  
        (high-power electrochem. capacitor contg. layer of)  
IT 7440-32-6, Titanium, uses 7440-50-8, Copper, uses  
    **7440-66-6, Zinc**, uses **12597-68-1, Stainless steel**, uses  
        (high-power electrochem. capacitor contg. substrate of foil of)  
  
L42 ANSWER 14 OF 26 HCA COPYRIGHT 2006 ACS on STN  
127:98506 Hexafluorotitanate tracer for monitoring of dried-in-place  
    **polyacrylamide** primer in coating of metal articles. Ouyang,  
    Jiangbo; Harpel, William L. (BetzDearborn, Inc., USA). U.S. US  
    5641537 A **19970624**, 7 pp., Cont.-in-part of U.S.  
    5,451,270. (English). CODEN: USXXAM. APPLICATION: US 1995-498327  
    19950705. PRIORITY: US 1994-213414 19940315; US 1994-307970  
    19940916.  
AB The primer coverage from chromate-free **polyacrylamide** bath  
for the dried-in-place conversion coating can be monitored by adding  
(NH<sub>4</sub>)<sub>2</sub>TiF<sub>6</sub> tracer at 0.1-10% to the bath, resulting in the primer  
coating that can be monitored by x-ray fluorescence to detect Ti.  
The modified primer bath with 0.05-2% anionic **polyacrylamide**  
is suitable in coating or painting of Al-alloy, **steel**, Zn,  
Zn-Al alloy, and galvanized surfaces.  
IT **9003-05-8, Polyacrylamide**  
    (anionic, primer bath with; hexafluorotitanate tracer for  
    monitoring of dried-in-place **polyacrylamide** primer in  
    coating of metal or alloy articles)  
RN 9003-05-8 HCA  
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, processes 11146-15-9, AA 3003  
 12597-69-2, Steel, processes 12635-57-3  
 37321-73-6, AA 3004

(coating of, primer for; hexafluorotitanate tracer for monitoring of dried-in-place **polyacrylamide** primer in coating of metal or alloy articles)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 11146-15-9 HCA

CN Aluminum alloy, base, Al 97-98,Mn 1.0-1.5,Fe 0-0.7,Si 0-0.6,Cu 0.05-0.20,Zn 0-0.10 (AA 3003) (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
<hr/>		
Al	97	7429-90-5
Mn	1.0	7439-96-5
Fe	0	7439-89-6
Si	0	7440-21-3
Cu	0.05	7440-50-8
Zn	0	7440-66-6

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 12635-57-3 HCA

CN Zinc alloy, base, Zn,Al (9CI) (CA INDEX NAME)

Component Component

## Registry Number

---

Zn	7440-66-6
Al	7429-90-5

RN 37321-73-6 HCA

CN Aluminum alloy, base, Al 96-98,Mn 1.0-1.5,Mg 0.8-1.3,Fe 0-0.7,Si 0-0.30,Cu 0-0.25,Zn 0-0.20 (AA 3004) (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number

---

Al	96	-	98	7429-90-5
Mn	1.0	-	1.5	7439-96-5
Mg	0.8	-	1.3	7439-95-4
Fe	0	-	0.7	7439-89-6
Si	0	-	0.30	7440-21-3
Cu	0	-	0.25	7440-50-8
Zn	0	-	0.25	7440-66-6

IC ICM C23C022-00

INCL 427008000

CC 56-6 (Nonferrous Metals and Alloys)

Section cross-reference(s): 42

ST polyacrylamide primer bath titanate tracer; coating metal primer bath titanate tracer

IT Galvanized steel

(coating of, primer for; hexafluorotitanate tracer for monitoring of dried-in-place polyacrylamide primer in coating of metal or alloy articles)

IT Tracers

(coating primer with; hexafluorotitanate tracer for monitoring of dried-in-place polyacrylamide primer in coating of metal or alloy articles)

IT Surfactants

(primer bath with; hexafluorotitanate tracer for monitoring of dried-in-place polyacrylamide primer in coating of metal or alloy articles)

IT Coating process

(primer, monitoring of; hexafluorotitanate tracer for monitoring of dried-in-place polyacrylamide primer in coating of metal or alloy articles)

IT 9003-05-8, Polyacrylamide  
(anionic, primer bath with; hexafluorotitanate tracer for monitoring of dried-in-place **Polyacrylamide** primer in coating of metal or alloy articles)

IT 7429-90-5, Aluminum, processes 7440-66-6, Zinc, processes 11146-15-9, AA 3003 12597-69-2, Steel, processes 12635-57-3 37321-73-6, AA 3004  
(coating of, primer for; hexafluorotitanate tracer for monitoring of dried-in-place **Polyacrylamide** primer in coating of metal or alloy articles)

IT 7440-32-6, Titanium, analysis  
(tracer, primer with; hexafluorotitanate tracer for monitoring of dried-in-place **Polyacrylamide** primer in coating of metal or alloy articles)

IT 16962-40-6, Ammonium hexafluorotitanate  
(tracer, primer with; hexafluorotitanate tracer for monitoring of dried-in-place **Polyacrylamide** primer in coating of metal or alloy articles)

L42 ANSWER 15 OF 26 HCA COPYRIGHT 2006 ACS on STN  
126:33068 Bonding of metals by **epoxy**-based adhesives. Yagi,  
Motohiro; Yuasa, Motokazu (Sekisui Chemical Co. Ltd., Japan). Jpn.  
Kokai Tokkyo Koho JP 08259902 A2 19961008 Heisei, 7 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-70027 19950328.

AB In bonding of metals with substrates by forming polymer films on the metal surface followed by coating with **epoxy** adhesives, hydrophilic monomers are applied on the metal surface, inert gas is filled in a container having a pair of metal electrodes, metal substrate placed between the upper and lower electrodes, solid dielec. placed opposite the metal surface, plasma discharge part, gas introduction part, gas exhaustion part, and power source, voltage is applied between the electrodes at atm. pressure, and the resulting discharge plasma is contacted to the surface of metals. Thus, an SPCC plate was immersed in 1 N HCl, washed, coated with a 10% acrylamide soln., dried, and treated with He plasma to show shear adhesion 161 kg/cm<sup>2</sup> when bonded using S-Dine 3100 at 100° for 60 min.

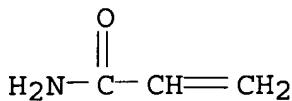
IT 9003-05-8P, Poly(**acrylamide**)  
(plasma polymn. on metal surface for adhesion improvement with **epoxy** adhesives)

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IT 12616-86-3 39462-15-2, SPCC, processes  
 (plasma polymn. on metal surface for adhesion improvement with  
 epoxy adhesives)

RN 12616-86-3 HCA

CN Aluminum alloy, base, Al 93-96, Mg 4.0-4.9, Mn 0.40-1.0, Fe 0-0.40, Si  
 0-0.40, Cr 0.05-0.25, Zn 0-0.25, Ti 0-0.15, Cu 0-0.10 (AA 5083) (9CI)  
 (CA INDEX NAME)

Component	Component	Component		
	Percent	Registry Number		
<hr/>				
Al	93	-	96	7429-90-5
Mg	4.0	-	4.9	7439-95-4
Mn	0.4	-	1.0	7439-96-5
Fe	0	-	0.40	7439-89-6
Si	0	-	0.40	7440-21-3
Cr	0.05	-	0.25	7440-47-3
Zn	0	-	0.25	7440-66-6
Ti	0	-	0.15	7440-32-6
Cu	0	-	0.10	7440-50-8

RN 39462-15-2 HCA

CN Steel, (JIS SPCC) (9CI) (CA INDEX NAME)

Component	Component	Component		
	Percent	Registry Number		
<hr/>				
Fe	99	-	100	7439-89-6
Mn	0	-	0.50	7439-96-5
C	0	-	0.12	7440-44-0
S	0	-	0.045	7704-34-9

P 0 - 0.040 7723-14-0

IC ICM C09J005-02  
ICS B01J019-08; C09J163-00

ICA C08F002-58; C23C016-50

CC 42-2 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55, 56

IT Adhesion, physical  
Coating process  
Plasma  
(plasma polymn. on metal surface for adhesion improvement with  
epoxy adhesives)

IT Epoxy resins, uses  
(plasma polymn. on metal surface for adhesion improvement with  
epoxy adhesives)

IT 9003-05-8P, Poly(acrylamide)  
9011-14-7P, Poly(methyl methacrylate)  
(plasma polymn. on metal surface for adhesion improvement with  
epoxy adhesives)

IT 75-73-0, Carbon tetrafluoride 1333-74-0, Hydrogen, processes  
7440-59-7, Helium, processes 7727-37-9, Nitrogen, processes  
7782-44-7, Oxygen, processes 12616-86-3 39462-15-2  
, SPCC, processes  
(plasma polymn. on metal surface for adhesion improvement with  
epoxy adhesives)

IT 147335-69-1, S-Dine 3100 184594-24-9, S-Dine RY 2021  
(plasma polymn. on metal surface for adhesion improvement with  
epoxy adhesives)

L42 ANSWER 16 OF 26 HCA COPYRIGHT 2006 ACS on STN

125:39677 Aqueous primer bath with polyacryamide for chromate-free  
coating suitable for aluminum alloys and steel. Ouyang,  
Jiangbo; Harpel, William L. (Betz Laboratories, Inc., USA). U.S. US  
5518555 A 19960521, 4 pp., Cont.-in-part of U.S. Ser. No.  
107,384, abandoned. (English). CODEN: USXXAM. APPLICATION: US  
1995-396942 19950301. PRIORITY: US 1993-107384 19930816.

AB The aq. primer bath free of heavy metals, chromate, and fluorides  
contains anionic polyacrylamide copolymer having mol. wt.  
of 2000-500,000 and the acrylate:acrylamide ratio of 1:5 to 10:1,  
and is controlled for pH of 8-11 and the copolymer at nominally  
0.05-2%. The bath is suitable for a primer coating on Al, Al  
alloys, or steel, and optionally contains a cationic or

nonionic surfactant. Cold-rolled **steel** strip was spray coated with aq. Fe phosphate at 33 mg/ft<sup>2</sup>, and sealed by spray coating at room temp. with the aq. soln. contg. 0.05% copolymer.

IT 11146-15-9, AA 3003 12597-69-2, **Steel**, processes

(coating of; aq. primer bath with polyacryamide for chromate-free coating of metal)

RN 11146-15-9 HCA

CN Aluminum alloy, base, Al 97-98,Mn 1.0-1.5,Fe 0-0.7,Si 0-0.6,Cu 0.05-0.20,Zn 0-0.10 (AA 3003) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
=====+=====+=====		
Al	97 - 99	7429-90-5
Mn	1.0 - 1.5	7439-96-5
Fe	0 - 0.7	7439-89-6
Si	0 - 0.6	7440-21-3
Cu	0.05 - 0.20	7440-50-8
Zn	0 - 0.10	7440-66-6

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9003-05-8, **Polyacrylamide**

(coating with; aq. primer bath with polyacryamide for chromate-free coating of metal)

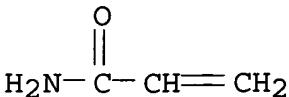
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C23C022-77

INCL 148251000

CC 56-6 (Nonferrous Metals and Alloys)  
 Section cross-reference(s): 42

ST **polyacrylamide** aq primer coating metal; aluminum alloy  
 primer coating aq **polyacrylamide**; **steel** primer  
 coating aq **polyacrylamide**; phosphated **steel**  
 sealing aq **polyacrylamide**

IT **Polyesters**, processes  
 (paint, coating with; aq. primer bath with polyacryamide for  
 chromate-free coating of metal before painting)

IT **Coating process**  
 (primer; aq. primer bath with polyacryamide for chromate-free  
 coating of metal)

IT 7429-90-5, Aluminum, processes **11146-15-9**, AA 3003  
**12597-69-2**, **Steel**, processes  
 (coating of; aq. primer bath with polyacryamide for chromate-free  
 coating of metal)

IT **9003-05-8, Polyacrylamide**  
 (coating with; aq. primer bath with polyacryamide for  
 chromate-free coating of metal)

L42 ANSWER 17 OF 26 HCA COPYRIGHT 2006 ACS on STN  
 123:202335 Chromate, fluoride, and heavy metal-free coating of metal  
 surfaces with anionic **polyacrylamide** copolymers. Ouyang,  
 Jiangbo; Harpel, William Lester (Betz Europe, Inc., USA). Eur. Pat.  
 Appl. EP 639627 A1 **19950222**, 8 pp. DESIGNATED STATES: R:  
 AT, BE, DE, ES, FR, GB, IE, IT, NL, PT. (English). CODEN: EPXXDW.  
 APPLICATION: EP 1994-305234 19940718. PRIORITY: US 1993-107384  
 19930816.

AB Metal surfaces are pretreated for sealing, corrosion resistance, and  
 improved surface adhesion properties, esp. before painting, using an  
 aq. soln. of an anionic **polyacrylamide** contg. surfactants  
 such as Triton X-100, which can be rinsed off or dried in place.

IT **11146-15-9**, Aa 3003 **12597-69-2**, **Steel**,  
 uses  
 (chromate, fluoride, and heavy metal-free pretreatment of metal  
 surfaces with anionic **polyacrylamide** copolymers)

RN 11146-15-9 HCA  
 CN Aluminum alloy, base, Al 97-98,Mn 1.0-1.5,Fe 0-0.7,Si 0-0.6,Cu  
 0.05-0.20,Zn 0-0.10 (AA 3003) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
-----------	----------------------	------------------------------

Al	97	-	99
Mn	1.0	-	1.5
Fe	0	-	0.7
Si	0	-	0.6
Cu	0.05	-	0.20
Zn	0	-	0.10

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9003-05-8D, Polyacrylamide, anionic polymers  
(chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

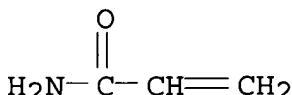
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C09D133-02

ICS C09D133-26; C09D005-14; B05D007-14; C23F011-173

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 38, 55, 56

ST metal surface painting polyacrylamide precoating; coating polyacrylamide metal surface pretreatment; anticorrosion coating metal polyacrylamide

IT Chromates

Fluorides, miscellaneous

(chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT Coating process

(painting, surface pretreatment for; chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT Coating materials  
(anticorrosive, adhesion-promoting; chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT Metals, miscellaneous  
(heavy, chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT Aluminum alloy, base  
(chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT 7429-90-5, Aluminum, uses 11146-15-9, Aa 3003  
**12597-69-2, Steel, uses**  
(chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT 9002-93-1, Triton x-100 9016-45-9, Surfonic n-95 168041-49-4, Chemquat 508/40  
(chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

IT **9003-05-8D, Polyacrylamide, anionic polymers**  
(chromate, fluoride, and heavy metal-free pretreatment of metal surfaces with anionic polyacrylamide copolymers)

L42 ANSWER 18 OF 26 HCA COPYRIGHT 2006 ACS on STN

120:271490 Solubilized rigid-rod polyphenyls. Marrocco, Matthew L., III; Gagne, Robert R.; Trimmer, Mark Steven (Maxdem Inc., USA). PCT Int. Appl. WO 9318076 A1 **19930916**, 102 pp. DESIGNATED STATES: W: CA, JP; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1993-US1732 19930224. PRIORITY: US 1992-847321 19920306.

AB The title polymers have repeating units  $(C_6R_1R_2R_3R_4)_n$  [R<sub>1-4</sub> = H or a solubilizing side group,  $\geq 1$  of 100 monomer units contains the side group; n  $\geq 25$  (no.-av.)] and are typically prep'd. by reductive coupling polymn. of dichlorobenzoyl-contg. compds. with Zn in the presence of Ni-phosphine catalysts. The polymers are useful as fibers, coatings, and semipermeable membranes, , in printed circuits, and in abrasion-resistant polymer blends (i.e. mol. composites).

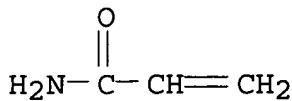
IT **9003-05-8, Polyacrylamide 25038-54-4,**  
Nylon 6, uses  
(blends with solubilized rigid-rod polyphenyls)

RN 9003-05-8 HCA

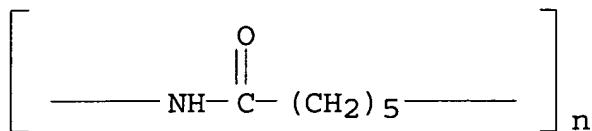
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



RN 25038-54-4 HCA  
 CN Poly[imino(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



IT 7440-66-6, Zinc, uses  
 (powder, prepn. of solubilized polyphenyls from  
 dichlorobenzoyl-contg. compds. in presence of)

RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IC ICM C08G061-00  
 ICS C08G061-10; C08G002-00  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 40

IT **Epoxy** resins, uses  
 Phenolic resins, uses  
 Polyamides, uses  
 Polycarbonates, uses  
**Polyesters**, uses  
 Polyoxyarylenes  
 Polyoxymethylenes, uses  
 Polyoxyphenylenes  
**Urethane** polymers, uses

(blends with solubilized rigid-rod polyphenyls)

IT **Coating materials**

(solubilized rigid rod polyphenyls for)

IT **Polyesters, uses**

(arom., blends with solubilized rigid-rod polyphenyls)

IT 9002-84-0, **Polytetrafluoroethylene** 9002-85-1, **Poly(vinylidene chloride)** 9002-86-2, **PVC** 9002-88-4, **Polyethylene** 9002-89-5, **PVA 9003-05-8, Polyacrylamide** 9003-20-7, **PVA** 9003-31-0, **Polyisoprene** 9003-53-6, **Polystyrene** 9011-14-7, **PMMA** 9063-70-1, **Polychlorobutadiene** 24936-68-3, **uses** 24937-79-9, **Poly(vinylidene fluoride)** 24968-12-5, **Butanediol-terephthalic acid copolymer, sru** 25014-41-9, **Polyacrylonitrile** 25037-45-0, **Poly(bisphenol A carbonate)** 25038-54-4, **Nylon 6, uses** 25189-11-1, **Bisphenol A-isophthalic acid copolymer** 25212-77-5, **Bisphenol A-isophthalic acid copolymer, sru** 25322-68-3, **Poly(ethylene oxide)** 25322-69-4, **Poly(propylene oxide)** 25568-84-7, **Polycyclopentadiene** 26062-94-2, **Butanediol-terephthalic acid copolymer** 26659-32-5, **Bisphenol A-terephthalic acid copolymer, sru** 26659-86-9, **Bisphenol A-terephthalic acid copolymer** 32131-17-2, **Nylon 66, uses** 39316-43-3, **Noryl 731**

(blends with solubilized rigid-rod polyphenyls)

IT **7440-66-6, Zinc, uses**

(powder, prepns. of solubilized polyphenyls from dichlorobenzoyl-contg. compds. in presence of)

L42 ANSWER 19 OF 26 HCA COPYRIGHT 2006 ACS on STN

117:196135 Surface-treated materials with good press formability, adhesion to coatings, and corrosion resistance after coating. Sato, Hiroshi; Ikeda, Tsugumoto; Hisamoto, Atsushi; Yamamura, Nagisa (Kobe Steel, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04202800 A2 19920723 Heisei, 5 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1990-337769 19901130.

AB The title materials comprise base materials and coatings of Zn-base or Fe-base metals contg. 0.001-10 wt.% C as org. polymers which have  $\geq 5$  mol% (as av., in their repeating units) side chains of CONR1(R2) (R1-2 = H, alkyl) to which **epoxy** group-having compds. are attached by addn. reaction. The materials have strong adhesion to top coatings such as alkyd melamine resin paintings.

IT **12597-69-2, Steel, miscellaneous**

(coating of, with metals contg. amide-contg. polymers)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

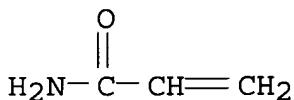
IT **7440-66-6**, Zinc, uses  
     (coatings contg., amide-contg. polymer in, on metals)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **9003-05-8D**, Poly(acrylamide),  
     epichlorohydrin modified  
     (coatings contg., metal, on metals)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IC ICM C25D015-02  
 CC 55-6 (Ferrous Metals and Alloys)  
     Section cross-reference(s): 38, 56  
 ST metal coating amide polymer additive; epoxy polymer addn  
     metal coating; complex polymer addn metal coating; zinc coating  
     polymer complex addn; iron coating polymer complex addn  
 IT Galvanized iron and **steel**  
     (coating of, with metals contg. amide-contg. polymers)  
 IT **12597-69-2**, Steel, miscellaneous  
     (coating of, with metals contg. amide-contg. polymers)  
 IT 7439-89-6, Iron, uses 7440-02-0, Nickel, uses 7440-47-3,  
     Chromium, uses **7440-66-6**, Zinc, uses 7723-14-0,  
     Phosphorus, uses  
     (coatings contg., amide-contg. polymer in, on metals)  
 IT **9003-05-8D**, Poly(acrylamide),  
     epichlorohydrin modified  
     (coatings contg., metal, on metals)

L42 ANSWER 20 OF 26 HCA COPYRIGHT 2006 ACS on STN

110:15118 Manufacture of a colored surface-treated **steel**

sheet. Shindo, Yoshio; Saito, Katsushi; Murata, Toshimichi (Nippon Steel Corp., Japan). Jpn. Kokai Tokkyo Koho JP 63195296 A2

**19880812** Showa, 8 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1987-27751 19870209.

AB The title method involves cathodically treating a (un)plated **steel** sheet in an aq. bath contg. a H<sub>2</sub>O-sol. cationic polymer (e.g., polyamine sulfone), Zn ions, and metal ions, whose oxide is colored, in addn. to a Cr(VI) compd., phosphate, sol., H<sub>2</sub>O-sol. polymer, and/or chelating compd. Addnl., the method involves carrying out a guard coating (0.5-3 μm). The sheet has an improved interior appearance and processing properties, and is resistant to corrosion and scratching.

IT **12597-69-2**

(coating process, guard, of **steel** sheets)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

(electrochem. coloring of

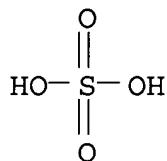
IT **7733-02-0, Zinc sulfate**

**9003-05-8**

(electrochem. coloring of **steel** sheets in bath contg.)

RN 7733-02-0 HCA

CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)



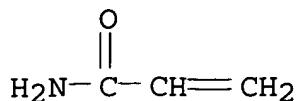
● Zn

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CRN 79-06-1

CMF C3 H5 N O

IC ICM C25D011-38  
ICS C25D011-36

CC 72-8 (Electrochemistry)

ST steel electrochem coloring coating polyamine sulfone

IT Coating process

(guard, of steel sheets)

IT Coloring  
(electrochem., of steel, bath compns. for)IT Polysulfones, uses and miscellaneous  
(polyamine-, electrochem. coloring of steel sheets in  
bath contg.)IT Polyamines  
(polysulfone-, electrochem. coloring of steel sheets in  
bath contg.)IT 12597-69-2  
(coating process, guard, of steel sheets)IT 7631-86-9, Silica, uses and miscellaneous  
(colloidal, electrochem. coloring of steel sheets in  
bath contg.)IT 12597-69-2, Steel, reactions  
(electrochem. coloring of)IT 1314-23-4, Zirconium oxide (ZrO<sub>2</sub>), uses and miscellaneous  
1333-82-0, Chromium oxide (CrO<sub>3</sub>) 1344-28-1, Aluminum oxide  
(Al<sub>2</sub>O<sub>3</sub>), uses and miscellaneous 13463-67-7, Titanium oxide (TiO<sub>2</sub>),  
uses and miscellaneous 25153-40-6, Vinyl methyl ether-maleic acid  
copolymer  
(electrochem. coloring of steel sheets in bath contg.)IT 7720-78-7, Iron sulfate (FeSO<sub>4</sub>) 7722-76-1, Ammonium dihydrogen  
phosphate 7733-02-0, Zinc sulfate  
9003-05-8 10101-53-8, Chromium sulfate (Cr<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>)  
(electrochem. coloring of steel sheets in bath contg.)

**steel** sheet with improved anticorrosion properties. Shindo, Yoshio; Saito, Katsushi; Yamazaki, Fumio (Nippon Steel Corp., Japan). Jpn. Kokai Tokkyo Koho JP 63143292 A2 **19880615** Showa, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-289938 19861205.

AB The title method involves cathodic or a.c. electrolysis in an acidic aq. bath having  $\text{Cr}^{3+}/(\text{Cr}^{3+} + \text{Cr}^{6+}) = 0.1\text{-}0.7$ . Addnl., the bath may contain inorg. anions, multivalent metal salts, inorg. polymer compds., org. polymers, and/or chelate compds.

IT **12597-69-2**

(coating process, chromating, electrochem., of **steel**, chromium ion concn. ratios for)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT **7440-66-6**, Zinc, uses and miscellaneous **9003-05-8**, **Polyacrylamide**

(electrochem. chromating of **steel** in bath contg.)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

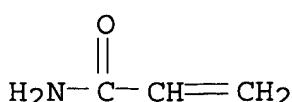
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C25D011-38

ICS C25D011-38

CC 72-8 (Electrochemistry)

Section cross-reference(s): 55

ST chromating electrochem **steel**

IT Silica gel, uses and miscellaneous  
(electrochem. chromating of **steel** in bath contg.)  
IT **Coating process**  
(chromating, electrochem., of **steel**, chromium ion  
concn. ratios for)  
IT **12597-69-2**  
(coating process, chromating, electrochem., of **steel**,  
chromium ion concn. ratios for)  
IT 1344-28-1, uses and miscellaneous 7439-95-4, uses and  
miscellaneous 7440-66-6, Zinc, uses and miscellaneous  
**9003-05-8, Polyacrylamide**  
(electrochem. chromating of **steel** in bath contg.)  
IT 14213-97-9 14259-85-9 14265-44-2, uses and miscellaneous  
16887-00-6, Chlorine ion, uses and miscellaneous 16984-48-8,  
Fluorine ion, uses and miscellaneous 17084-08-1  
(electrochem. chromating of **steel** in bath contg.)  
IT 7440-47-3, uses and miscellaneous  
(in electrochem. chromating of **steel**, concn. ratios of)

L42 ANSWER 22 OF 26 HCA COPYRIGHT 2006 ACS on STN  
107:221136 Effect of polymer additives in chromating solutions on the  
corrosion resistance of zinc coatings. Maceikiene, A.; Preksaite,  
R.; Kaikariene, Z. (Inst. Khim. Khim. Tekhnol., Vilnius, USSR).  
Lietuvos TSR Mokslu Akademijos Darbai, Serija B: Chemija, Technika,  
Fizine Geografija (3), 19-23 (Russian) 1987. CODEN:  
LMDBAL. ISSN: 0024-2993.

AB Films of Zn 6  $\mu\text{m}$  thick on St 10 **steel** substrate were  
chromated in a polymer-contg. bath, and tested for corrosion  
resistance in salt-spray chamber or aq. 3% NaCl. Corrosion  
resistance after 100 h was increased by addn. of  
**polyacrylamide** or water-sol. MTs-100 methylcellulose, but  
heating at  $>100^\circ$  impaired the increased protection.

IT **9003-05-8, Polyacrylamide**  
(chromating in bath contg., of galvanized **steel**)

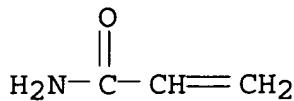
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, uses and miscellaneous  
 (chromating of, bath with **polyacrylamide** or  
 methylcellulose for)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

CC 55-6 (Ferrous Metals and Alloys)

ST zinc coating chromating **steel** protection;  
**polyacrylamide** chromating bath galvanized **steel**;  
 methylcellulose chromating bath galvanized **steel**

IT Galvanized iron and **steel**  
 (chromating of, bath with **polyacrylamide** or  
 methylcellulose for)

IT Coating process  
 (chromating, of zinc, bath with **polyacrylamide** or  
 methylcellulose for)

IT 9003-05-8, **Polyacrylamide** 9004-67-5  
 (chromating in bath contg., of galvanized **steel**)

IT 7440-66-6, Zinc, uses and miscellaneous  
 (chromating of, bath with **polyacrylamide** or  
 methylcellulose for)

L42 ANSWER 23 OF 26 HCA COPYRIGHT 2006 ACS on STN

95:206375 Chemical stability of **polyacrylamide** polymers.

Shupe, Russell D. (Conoco Inc., USA). JPT, Journal of Petroleum  
 Technology, 33(8), 1513-29 (English) 1981. CODEN: JPTJAM.  
 ISSN: 0149-2136.

AB A comprehensive study of the chem. stability of  
**polyacrylamide** (PAA) [9003-05-8] polymers was  
 conducted. The primary emphasis of the study was to det. the  
 stability of Dow Pusher 500 PAA in Sundance brine at 115°F.  
 Expts. were completed which show the effect of biocides, metals,  
 ferrous and ferric iron salts, pH, surfactants, alcs., antioxidants,  
 Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub>, thiourea [62-56-6], plastic pipe, H<sub>2</sub>CO [50-00-0] concn.,

free radical scavengers, hydrazine, O, and temp. on the chem. stability of PAA. Stability tests were conducted at temps. ranging from room temp. to 221°F. Many substances caused substantial chem. degrdn. of PAA polymers in the presence of O; however, in many cases, the adverse effects of these substances could be reduced or eliminated by the proper selection of chem. stabilizers or the nearly complete removal of O from the solns.

IT 9003-05-8

(chem. stability of, petroleum recovery in relation to)

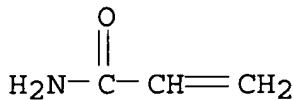
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 11121-90-7, properties 12597-68-1, properties  
(polyacrylamide stability in relation to)

RN 11121-90-7 HCA

CN Steel, carbon (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 12597-68-1 HCA

CN Stainless steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 7440-66-6, properties

(polyacrylamide stability in relation to)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

CC 51-2 (Fossil Fuels, Derivatives, and Related Products)

Section cross-reference(s): 37

ST polyacrylamide chem stability petroleum recovery

IT Petroleum recovery

(by waterflood, **polyacrylamide** in, chem. stability of)

IT Surfactants

Epoxy resins, uses and miscellaneous

Glass fibers, uses and miscellaneous

(**polyacrylamide** stability in relation to)

IT 9003-05-8

(chem. stability of, petroleum recovery in relation to)

IT 9085-80-7 11105-26-3 11121-90-7, properties

12597-68-1, properties 12597-71-6, properties

15438-31-0, properties 37286-21-8 79586-85-9 79586-86-0

(**polyacrylamide** stability in relation to)

IT 50-00-0, properties 62-56-6, properties 67-56-1, properties

67-63-0, properties 71-36-3, properties 75-65-0, properties

75-84-3 78-83-1, properties 78-92-2 100-51-6, properties

107-02-8, properties 108-95-2, properties 110-71-4 111-30-8

131-52-2 302-01-2, properties 584-02-1 7440-02-0, properties

7440-50-8, properties 7440-66-6, properties 7775-14-6

7782-44-7, properties 9002-86-2

(**polyacrylamide** stability in relation to)

L42 ANSWER 24 OF 26 HCA COPYRIGHT 2006 ACS on STN  
91:58791 Coating compositions. Taru, Marc Georges Maurice Ghislain;  
Ledent, Michel Alex Omer (Monsanto Europe S. A., Belg.). Brit. GB  
1541022 19790221, 3 pp. (English). CODEN: BRXXAA.  
APPLICATION: GB 1976-39519 19770916.

AB The addn. of **poly(acrylamide)** (I) [

9003-05-8] to Zn-based primers contg. SiO<sub>2</sub> sol liq. binders gave corrosion-resistant coatings with excellent mech. properties on **steel**. Thus, to a dispersion of 2 g I (mol. wt. .apprx.105) and 1 g K bichromate in 920 g SiO<sub>2</sub> sol at pH 9.8 (SiO<sub>2</sub> content 30% and particle size 25 nm) was added 3080 g Zn powder (particle size .apprx.6  $\mu$ ). When sprayed or brushed onto grit-blasted **steel** strips the coating was touch dry in .apprx.5 min, hard after .apprx.2 h, and had good adhesion to the **steel**.

IT 7440-66-6, uses and miscellaneous

(metal primer contg. powd.)

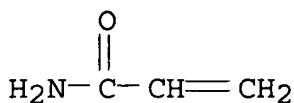
RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

IT 9003-05-8  
     (zinc-based metal primer compn. contg.)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IC C09D001-00; C09D003-727; C09D005-10  
 CC 42-4 (Coatings, Inks, and Related Products)  
     Section cross-reference(s): 55  
 ST polyacrylamide zinc primer compn; silica sol binder primer  
 IT Binding materials  
     (poly(acrylamide)-silica sol, for zinc-based  
       primers)  
 IT Coating materials  
     (primers, zinc-based, improved binders for)  
 IT 7440-66-6, uses and miscellaneous  
     (metal primer contg. powd.)  
 IT 7778-50-9 9003-05-8  
     (zinc-based metal primer compn. contg.)

L42 ANSWER 25 OF 26 HCA COPYRIGHT 2006 ACS on STN  
 87:24906 Coated laminated steel plates. Ariga, Keiji;  
     Tsutsui, Nobuyuki; Kanda, Katsumi (Toyo Kohan Co., Ltd., Japan).  
     Ger. Offen. DE 2650611 19770512, 15 pp. (German). CODEN:  
     GWXXBX. APPLICATION: DE 1976-2650611 19761104.

AB Corrosion-resistant coatings are applied to steel sheets  
     by electrolysis in suspensions of H<sub>2</sub>O-dispersible resins and/or  
     metal compd. sols, optionally contg. powd. infusible plastics,  
     metals, alloys, and/or metal compds. poorly sol. in H<sub>2</sub>O. Thus, a  
     cleaned, low-C steel sheet is electrolyzed 15 s at  
     20° and 5 A/dm<sup>2</sup> in a dispersion of Cr hydroxide sol (particle  
     size 100 m<sub>μ</sub>) 35, epoxy resin (40<sub>μ</sub>) 10, and  
     polyacrylamide (I) [9003-05-8] 10 g/L and baked 2

min at 250° to give a bright blue, 14- $\mu$  coating with Erichsen indentation 8 mm and salt spray corrosion resistance (JIS Z 2371)  $\geq 200$  h; compared with <200 in the absence of I.

IT 9003-05-8

(electrophoretic coatings contg., corrosion-resistant, for **steel**)

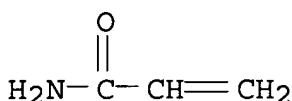
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, uses and miscellaneous  
(electrophoretic corrosion-resistant coatings contg. powd., for **steel**)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IC C25D015-00

CC 42-7 (Coatings, Inks, and Related Products)

Section cross-reference(s): 55

ST electrophoretic coating **steel**; corrosion resistance  
coating **steel**; **epoxy** resin coating **steel**  
; chromium hydroxide coating **steel**; **polyacrylamide**  
coating **steel**

IT Coating materials

(electrophoretic, corrosion-resistant, **epoxy** resins,  
contg. metal compd. sols and water-dispersible vinyl polymers,  
for **steel**)

IT 9003-05-8 9003-17-2

(electrophoretic coatings contg., corrosion-resistant, for  
**steel**)

IT 7440-66-6, uses and miscellaneous  
 (electrophoretic corrosion-resistant coatings contg. powd., for  
**steel**)

IT 12626-43-6  
 (sol, in electrophoretic, corrosion-resistant coatings for  
**steel**)

L42 ANSWER 26 OF 26 HCA COPYRIGHT 2006 ACS on STN  
 57:83785 Original Reference No. 57:16787c-e Protective coating.  
 Hartman, Harry J.; Pocock, Waiter E. (Allied Research Products,  
 Inc.). US 3053691 19620911, 4 pp. (Unavailable).

APPLICATION: US 19580129.

AB Polyacrylamide (I) is added directly to the soln. used for generating a chromate conversion coating on a metal surface. The corrosion resistance, water repellency, and paintbonding characteristics are thereby improved. Thus, a Zn-electroplated **steel** panel was immersed at room temp. in an aq. soln. of pH 2 contg. 2% I and 0.2% CrO<sub>6</sub><sup>2-</sup>. After drying at about 160°F., a clear, abrasion-resistant coating was formed, which showed only slight edge corrosion after 68 hrs. exposure in a standard 20% salt spray.

IT 9003-05-8, Acrylamide, homopolymer  
 (chromate conversion coating improvement by)

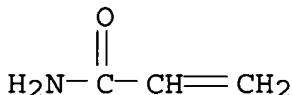
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc  
 (electrodeposits or electroplates of, on **steel**,  
 chromate coating on)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

CC 43 (Organic Coatings, Inks, and Related Products)

IT **Coating(s)**  
(chromate, **polyacrylamide** in increasing paint bonding and water repellency of)

IT **Ethers**  
(of amino polyhydric alcs., **polyurethane** from)

IT **Coating(s)**  
(with chromates or oxides in vinyl polymers, improving abrasion and paint bonding)

IT **9003-05-8, Acrylamide, homopolymer**  
(chromate conversion coating improvement by)

IT **7440-66-6, Zinc**  
(electrodeposits or electroplates of, on **steel**, chromate coating on)

IT 102-60-3, 2-Propanol, 1,1',1'',1'''-(ethylenedinitrilo)tetra-(ethers, **polyurethans** from)

=> D L40 1-5 CBIB ABS HITSTR HITIND

L40 ANSWER 1 OF 5 HCA COPYRIGHT 2006 ACS on STN  
139:183895 Acidic low-chromate bath with a polymer for passivation of **galvanized steel** substrates. Dey, Arun Kumar; Singh, Devendra Deo Narayan (Council of Scientific and Industrial Research, India). Indian IN 177464 A 19970118, 12 pp. (English). CODEN: INXXAP. APPLICATION: IN 1990-DE1284 19901218.

AB The acidic bath for passivation of **galvanized steel** strip is prep'd. from aq. chromate soln. contg. 0.01-0.50% by wt. of Cr by: (a) adding H<sub>2</sub>SO<sub>4</sub> for 0.002-0.20% by vol., with stirring; (b) adding HNO<sub>3</sub> at 0.01-0.50% by vol., with stirring; (c) and adding aq. soln. of water-sol. polymer for 0.01-0.50% by wt., esp. **polyacrylamide** or polyvinyl alc. The acidic bath is prep'd. from aq. soln. contg. CrO<sub>3</sub> or Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>. The **galvanized steel** strip is immersed in the acidic bath for 30-90 s at room temp. for passivation, followed by drying the passivated surface in air for 24-48 h. The polymer addn. to the bath increased the resistance of passivated Zn surface to aq.-NaCl spray corrosion.

IT **9003-05-8, Polyacrylamide**

(aq. chromating bath contg., passivation in; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

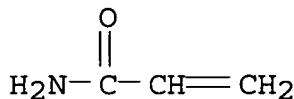
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, processes

(coating, passivation of; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IC ICM C23C022-27

CC 56-6 (Nonferrous Metals and Alloys)

Section cross-reference(s): 42

ST **galvanized steel** passivation aq acidic chromate bath

IT Passivation

(of **galvanized steel**; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

IT Chromating

(passivation by; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

IT **Galvanized steel**

(passivation of; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

IT 1333-82-0, Chromium oxide (CrO<sub>3</sub>) 10588-01-9, Sodium dichromate

(aq. bath contg., passivation in; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

IT 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 9002-89-5, Polyvinyl alcohol 9003-05-8,

**Polyacrylamide**

(aq. chromating bath contg., passivation in; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

IT 7440-66-6, Zinc, processes

(coating, passivation of; acidic low-chromate bath with polymer for passivation of **galvanized steel substrates**)

L40 ANSWER 2 OF 5 HCA COPYRIGHT 2006 ACS on STN

128:25687 Phosphorus-free corrosion inhibitor mixtures for water in industrial cooling and air-washer systems. Khambatta, Binaifer S.; Meier, Daniel A. (Nalco Chemical Co., USA). Eur. Pat. Appl. EP 807695 A1 19971119, 18 pp. DESIGNATED STATES: R: BE, DE, ES, FR, GB, IT, NL, PT. (English). CODEN: EPXXDW. APPLICATION: EP 1997-107695 19970512. PRIORITY: US 1996-647681 19960515.

AB The inhibitor mixts. for prevention of aq. corrosion on the surfaces of pipes or heat exchangers contain: (a) 2-50% of org. acids and/or their water-sol. salts; (b) 2-50% of alkali metal or NH<sub>4</sub> silicate, calcd. as SiO<sub>2</sub>; (c) 1-30% of scale inhibitors; and (d) water as the balance, optionally with biocides and/or polymeric dispersants. The org. acids are selected from adipic, gluconic, succinic, tartaric, malic, lactic, citric, benzoic, phthalic, terephthalic, isophthalic, and/or malonic acids, and optionally their salts. The scale inhibitor is typically polyacrylic acid, and/or anionic polymer with mol. wt. of 500-15,000. The corrosion inhibitor is suitable for industrial cooling water having alk. pH and low scale hardness, and is free of phosphate type inhibitors.

IT 7440-66-6, Zinc, uses

(coating, cooling systems with; corrosion inhibitor mixts. for water in industrial cooling and air-washer systems)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **12597-69-2, Steel, uses 12725-33-6, AISI 1010, uses**  
     (cooling systems with; corrosion inhibitor mixts. for water in industrial cooling and air-washer systems)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 12725-33-6 HCA

CN Steel, (AISI 1010) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
=====+=====+=====		
Fe	99 - 100	7439-89-6
Mn	0.30 - 0.60	7439-96-5
Si	0.10 - 0.35	7440-21-3
C	0.08 - 0.13	7440-44-0
S	0 - 0.050	7704-34-9
P	0 - 0.040	7723-14-0

IC ICM C23F011-08

CC 56-10 (Nonferrous Metals and Alloys)

Section cross-reference(s): 61

IT **Galvanized steel**

(cooling systems with; corrosion inhibitor mixts. for water in industrial cooling and air-washer systems)

IT **7440-66-6, Zinc, uses**

(coating, cooling systems with; corrosion inhibitor mixts. for water in industrial cooling and air-washer systems)

IT **12597-69-2, Steel, uses 12725-33-6, AISI**

1010, uses

(cooling systems with; corrosion inhibitor mixts. for water in industrial cooling and air-washer systems)

IT 75-75-2D, Methylsulfonic acid, acrylamides 79-10-7, Acrylic acid, uses 9003-06-9, Acrylic acid-acrylamide copolymer

(dispersant, cooling systems with; corrosion inhibitor mixts. for water in industrial cooling and air-washer systems)

L40 ANSWER 3 OF 5 HCA COPYRIGHT 2006 ACS on STN

106:57774 Manufacture of electrogalvanized **steel** plates.

Shindo, Yoshio; Saito, Katsushi; Wada, Koichi; Yamazaki, Fumio

(Nippon Steel Corp., Japan). Jpn. Kokai Tokkyo Koho JP 61127891 A2  
19860616 Showa, 9 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1984-249643 19841128.

AB **Steel** plates are electrogalvanized in acidic baths contg. 0.7-2.0 mol/L Zn ion and 1-100 ppm nonionic **polyacrylamide** (I) having av. mol. wt. 106-108, and having pH 0.5-2.0 at 40-70°, c.d. 100-450 A/dm<sup>2</sup>, and relative liq. velocity ≥30 m/min. The bath optionally contains 0.1-2.0 mol/L Ni and/or Fe ions. Homogeneous and smooth-surfaced white plating is obtained. Thus, **steel** plate was electrogalvanized in a pH 1.0 bath contg. 1.2 mol/L Zn<sup>2+</sup>, 100 g/L Na<sub>2</sub>SO<sub>4</sub>, and 50 ppm I (mol. wt. 10) at 60°, c.d. 100 A/dm<sup>2</sup>, and relative liq. velocity 30 m/min to give 20 g/m<sup>2</sup> Zn coating having whiteness degree 90. An electrogalvanization coating formed in a bath free of I at 60°, c.d. 150 A/dm<sup>2</sup>, and relative liq. velocity 30 m/min had whiteness degree 18.

IT 7440-66-6, Zinc, uses and miscellaneous  
(electroplating of smooth, on **steels**, in acidic baths  
contg. nonionic **polyacrylamide**)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 37345-61-2 37346-11-5  
(electroplating of smooth, on **steels**, in acidic baths  
contg. nonionic **polyacrylamide**)

RN 37345-61-2 HCA

CN Iron alloy, nonbase, Fe,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
=====	=====

Fe 7439-89-6

Zn 7440-66-6

RN 37346-11-5 HCA

CN Nickel alloy, nonbase, Ni,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number

=====+=====

Ni 7440-02-0  
Zn 7440-66-6

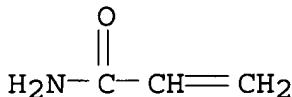
IT **7440-66-6**  
     (galvanization, electro-, acidic baths contg. nonionic  
       polyacrylamide for)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **9003-05-8, Polyacrylamide**  
     (nonionic, electroplating of smooth zinc from acid baths contg.)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IC ICM C25D005-26  
 ICS C25D003-22  
 CC 72-8 (Electrochemistry)  
     Section cross-reference(s): 55, 56  
 ST zinc electroplating **steel** nonionic **polyacrylamide**  
 IT **Galvanization**  
     (electro-, acidic baths contg. nonionic **polyacrylamide**  
       for)  
 IT **7440-66-6**, Zinc, uses and miscellaneous  
     (electroplating of smooth, on **steels**, in acidic baths  
       contg. nonionic **polyacrylamide**)  
 IT **37345-61-2 37346-11-5**  
     (electroplating of smooth, on **steels**, in acidic baths  
       contg. nonionic **polyacrylamide**)

IT **7440-66-6**

(galvanization, electro-, acidic baths contg. nonionic polyacrylamide for)

IT **9003-05-8, Polyacrylamide**

(nonionic, electroplating of smooth zinc from acid baths contg.)

L40 ANSWER 4 OF 5 HCA COPYRIGHT 2006 ACS on STN

86:9943 Effect of some organic amines on the properties of ammonium electrolytes used in zinc plating. Prusov, Yu. V.; Flerov, V. N. (Gor'k. Politekh. Inst. im. Zhdanova, Gorki, USSR). Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya, 19(8), 1292-3 (Russian) 1976. CODEN: IVUKAR. ISSN: 0579-2991.

AB Addn. of 1.5 g/l. NH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> or polyethylenepolyamine (I) to a Zn plating bath (ZnSO<sub>4</sub>.cntdot.7H<sub>2</sub>O 80, NH<sub>4</sub>Cl 150 g/l.) decreased the reactivity of Zn as well as the corrosion of galvanized Fe, and stabilized the soln. compn. I also markedly improved the brightness and hardness of the Zn surface. Other less-effective additives studied were pyridine, p-phenylenediamine, polyacrylamide, and picoline.

IT **7440-66-6, uses and miscellaneous**

(electroplating of, from bath contg. org. amines)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **9003-05-8**

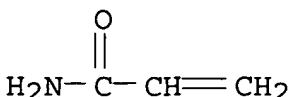
(in electroplating, of zinc, corrosion in relation to)

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C<sub>3</sub> H<sub>5</sub> N O

CC 72-6 (Electrochemistry)  
IT **Galvanized iron and steel**  
    (corrosion of, by org. amines)  
IT 7440-66-6, uses and miscellaneous  
    (electroplating of, from bath contg. org. amines)  
IT 9003-05-8  
    (in electroplating, of zinc, corrosion in relation to)

L40 ANSWER 5 OF 5 HCA COPYRIGHT 2006 ACS on STN  
77:129544 Treatment of **galvanized** scrap iron by a wet method.  
    (Societe de Prayon). Belg. BE 773906 **19720131**, 10 pp.  
    (French). CODEN: BEXXAL. APPLICATION: BE 1971-109262 19711013.

AB To allow independent recovery of Zn and Fe, **galvanized**  
iron scrap is treated with an aq. soln. of H<sub>2</sub>SO<sub>4</sub> contg. a colloidal  
flocculant selected from gelatins, bone marrow, starch, dextrins,  
guar gum, and **polyacrylamide**. The soln. may contain  
20-200 g/m<sup>3</sup> of the colloid and 20-200 g/l. of H<sub>2</sub>SO<sub>4</sub> and the  
treatment is carried out between 5 and 40°, preferably near  
20°. The soln. may contain **ZnSO<sub>4</sub>** and after the  
scrap **galvanized** iron is treated, the Zn can be recovered  
by electrolysis.

IT 7440-66-6P, preparation  
    (recovery of, from **galvanized steel** scrap)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8  
    (treatment in sulfuric acid soln. contg., of **galvanized**  
    **steel** scrap for metal recofery)

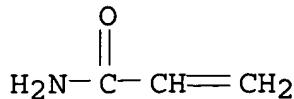
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C<sub>3</sub> H<sub>5</sub> N O



CC 55-1 (Ferrous Metals and Alloys)

Section cross-reference(s): 60

ST galvanized iron scrap treatment; zinc recovery  
galvanized scrap; iron recovery galvanized scrap;  
sulfuric acid treatment galvanized scrap; colloid  
galvanized scrap treatment; gelatin galvanized  
scrap treatment; starch galvanized scrap treatment;  
dextrin galvanized scrap treatment; polyacrylamide  
galvanized scrap treatment; guar gum galvanized  
scrap treatment

IT Waste solids

(galvanized steel scrap, metal recovery from)

IT Galvanized iron and steel

(metal recovery from scrap, soln. for)

IT Flocculation

(of sulfuric acid soln. for metal recovery from  
galvanized steel scrap)

IT Bone marrow

Cyamopsis tetragonolobus

Gelatins, uses and miscellaneous

(treatment in sulfuric acid soln. contg., of galvanized  
steel scrap for metal recovery)

IT 7439-89-6P, preparation 7440-66-6P, preparation  
(recovery of, from galvanized steel scrap)

IT 7664-93-9, uses and miscellaneous

(treatment in soln. contg., of galvanized steel  
scrap for metal recovery)

IT 9003-05-8 9004-53-9 9005-25-8, uses and miscellaneous  
(treatment in sulfuric acid soln. contg., of galvanized  
steel scrap for metal recovery)

=> D L43 1-12 CBIB ABS HITSTR HITIND

L43 ANSWER 1 OF 12 HCA COPYRIGHT 2006 ACS on STN

133:106384 Formation of coatings having photocatalytic functions without

deterioration of the substrates and cured products obtained thereby. Shimada, Nobuko; Kanamori, Taro; Sakagami, Toshinori (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000202363 A2 20000725, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-11121 19990119.

AB A base coating compn. selected from (A) R<sub>1</sub>nSi(OR<sub>2</sub>)<sub>4-n</sub> (I; R<sub>1</sub> = C<sub>1</sub>-8 org. group; R<sub>2</sub> = C<sub>1</sub>-5 alkyl, C<sub>1</sub>-6 acyl; n = 0-2), its hydrolyzates, and/or its condensates and H<sub>2</sub>O and/or org. solvents, (B) I, its hydrolyzates, and/or its condensates and polymers having hydrolyzable silyl groups and/or silanol groups, and (C) polymers having hydrolyzable silyl groups and/or silanol groups is applied on a substrate and over-coated with a top coating compn. contg. I, its hydrolyzates, and/or condensates, polymers having hydrolyzable silyl groups and/or silanol groups, and photocatalysts. Thus, MeSi(OMe)<sub>3</sub> was hydrolyzed in Me<sub>2</sub>CHOH in presence of MeOH-SiO<sub>2</sub> sol, dild. with Me<sub>2</sub>CHOH and MEK, and blended with 3-(2-aminoethyl)aminopropyltrimethoxysilane to give a base coating compn., which was applied on a PET film, dried, further coated with a top coat prep'd. from MeSi(OMe)<sub>3</sub> 70, Me<sub>2</sub>Si(OMe)<sub>2</sub> 30, Me methacrylate-Bu acrylate- $\gamma$ -methacryloxypropyltrimethoxysilane-acrylic acid-2-hydroxyethyl methacrylate-1,1,1-trimethylaminemethacrylimide-4-(meth)acryloyloxy-2,2,6,6-tetramethylpiperidine copolymer 50, 20% TiO<sub>2</sub> dispersion 350, and diisopropoxyethylacetatoacetatoaluminum 10 parts, and dried to give a test piece showing good alkali, chem., moisture, weathering, water, and soiling resistance.

IT 11109-50-5, SUS 304 12597-69-2, Steel,  
miscellaneous 37321-70-3, A1050P  
(formation of coatings having photocatalytic functions without deterioration of substrates)

RN 11109-50-5 HCA

CN Iron alloy, base, Fe 66-74, Cr 18.00-20.00, Ni 8.00-10.50, Mn 0-2.00, Si 0-1.00, C 0-0.08, P 0-0.045, S 0-0.030 (UNS S30400) (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
=====+=====+=====		
Fe	66 - 74	7439-89-6
Cr	18.00 - 20.00	7440-47-3
Ni	8.00 - 10.50	7440-02-0
Mn	0 - 2.00	7439-96-5
Si	0 - 1.00	7440-21-3

C	0	-	0.08	7440-44-0
P	0	-	0.045	7723-14-0
S	0	-	0.030	7704-34-9

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 37321-70-3 HCA

CN Aluminum alloy, base, Al 99.50-100, Fe 0-0.40, Si 0-0.25, Cu 0-0.05, Mg 0-0.05, Mn 0-0.05, V 0-0.05, Zn 0-0.05, Ti 0-0.03 (AA 1050) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Al	99.50 - 100	7429-90-5
Fe	0 - 0.40	7439-89-6
Si	0 - 0.25	7440-21-3
Cu	0 - 0.05	7440-50-8
Mg	0 - 0.05	7439-95-4
Mn	0 - 0.05	7439-96-5
V	0 - 0.05	7440-62-2
Zn	0 - 0.05	7440-66-6
Ti	0 - 0.03	7440-32-6

IC ICM B05D007-24

ICS B01J035-02; B05D005-00; B05D007-00; C09D005-00; C09D183-04

CC 42-10 (Coatings, Inks, and Related Products)

IT Coating materials

(antisoiling; formation of coatings having photocatalytic functions without deterioration of substrates)

IT Acrylic polymers, miscellaneous

Polycarbonates, miscellaneous

Polyesters, miscellaneous

(formation of coatings having photocatalytic functions without deterioration of substrates)

IT Epoxy resins, uses

Polyesters, uses

(formation of coatings having photocatalytic functions without deterioration of substrates)

IT 79-06-1DP, Acrylamide, polymers with

(meth)acrylates and methacryloxypropyltrimethoxysilane 79-10-7DP,

Acrylic acid, hydroxy-contg., polymers with (meth)acrylates and methacryloxypropyltrimethoxysilane, uses 80-62-6DP, Methyl methacrylate, polymers with (meth)acrylates and methacryloxypropyltrimethoxysilane 141-32-2DP, Butyl acrylate, polymers with (meth)acrylates and methacryloxypropyltrimethoxysilane 1112-39-6DP, Dimethyldimethoxysilane, polymers with alkoxy-silyl-contg. acrylic polymers 1185-55-3DP, Methyltrimethoxysilane, polymers with alkoxy-silyl-contg. acrylic polymers 2530-85-0DP,  $\gamma$ -Methacryloxypropyltrimethoxysilane, polymers with (meth)acrylates and methacryloxypropyltrimethoxysilane 16898-44-5DP, Trimethylaminemethacrylimide, polymers with (meth)acrylates and methacryloxypropyltrimethoxysilane 31582-45-3DP, 4-Methacryloyloxy-2,2,6,6-tetramethylpiperidine, polymers with (meth)acrylates and methacryloxypropyltrimethoxysilane 157914-44-8P, 3-(2-Aminoethyl)aminopropyltrimethoxysilane-methyltrimethoxysilane copolymer 282716-97-6DP, Acrylic acid-butyl acrylate-2-hydroxyethyl methacrylate-4-methacryloyloxy-2,2,6,6-tetramethylpiperidine- $\gamma$ -methacryloxypropyltrimethoxysilane-methyl methacrylate-1,1,1-trimethylaminemethacrylimide copolymer, reaction products with silicones and methyltrimethoxysilane 282716-97-6P, Acrylic acid-butyl acrylate-2-hydroxyethyl methacrylate-4-methacryloyloxy-2,2,6,6-tetramethylpiperidine- $\gamma$ -methacryloxypropyltrimethoxysilane-methyl methacrylate-1,1,1-trimethylaminemethacrylimide copolymer 282716-98-7P, Butyl acrylate-glycidyl methacrylate-4-methacryloyloxy-2,2,6,6-tetramethylpiperidine- $\gamma$ -methacryloxypropyltrimethoxysilane-methyl methacrylate-1,1,1-trimethylaminemethacrylimide copolymer 282716-99-8P, Acrylic acid-butyl acrylate-dimethyldimethoxysilane-2-hydroxyethyl methacrylate- $\gamma$ -methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperidine-methyl methacrylate-methyltrimethoxysilane-1,1,1-trimethylaminemethacrylimide copolymer 282717-00-4P, Butyl acrylate-dimethyldimethoxysilane-glycidyl methacrylate- $\gamma$ -methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperidine-methyl methacrylate-methyltrimethoxysilane-1,1,1-trimethylaminemethacrylimide copolymer 282717-01-5P, 3-(2-Aminoethyl)aminopropyltrimethoxysilane-glycidoxypolytrimethoxysilane-tetraethoxysilane copolymer 282719-75-9P, Acrylic acid-butyl acrylate-2-hydroxyethyl methacrylate- $\gamma$ -methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperidinemethyl methacrylate-methyltrimethoxysilane-MS 51-1,1,1-

trimethylaminemethacrylimide copolymer 282719-76-0P, Butyl acrylate-dimethyldimethoxysilane-glycidyl methacrylate- $\gamma$ -methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperidine-methyl methacrylate-methyltrimethoxysilane-MS 51-1,1,1-trimethylaminemethacrylimide copolymer

(formation of coatings having photocatalytic functions without deterioration of substrates)

IT 9003-56-9, ABS resin 9011-14-7, PMMA 11109-50-5, SUS 304

12597-69-2, Steel, miscellaneous 25038-59-9,

Poly(ethylene terephthalate), miscellaneous 37321-70-3,

A1050P

(formation of coatings having photocatalytic functions without deterioration of substrates)

L43 ANSWER 2 OF 12 HCA COPYRIGHT 2006 ACS on STN

133:60134 Coatings composition for friction reduction and process for treating metal surfaces. Goodreau, Bruce H.; Prescott, Thomas J.; Miller, Robert W.; Engel, Christopher A. (Henkel Corp., USA). PCT Int. Appl. WO 2000035595 A1 20000622, 25 pp. DESIGNATED STATES: W: AU, BR, CA, MX, TR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US25721 19981211.

AB A metal substrate is provided with a coating that (i) provides substantial corrosion resistance, (ii) makes it possible to shape the substrate by roll forming and similar light cold forming operations without the need for any oil or wax lubricant, and (iii) has good adhesion to subsequently applied paint. This is achieved by coating the metal substrate surface with an aq. liq. compn. that contains acrylate polymer resin, wax, and hexavalent chromium and then drying this coating into place on the surface to produce the desired dry coating. The resin component (A) is selected from the group consisting of polymers of acrylic acid, methacrylic acid, maleic acid, the esters of all of these acids, acrylonitrile, methacrylonitrile, acrylamide, and methacrylamide. The metal substrate is stainless steel coated with an alloy of aluminum and zinc.

IT 52308-11-9

(substrate coatings; coatings compn. for friction redn. and process for treating metal surfaces)

RN 52308-11-9 HCA

CN Aluminum alloy, base, Al 55, Zn 45 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Al	55	7429-90-5
Zn	45	7440-66-6

IT **12597-68-1**, Stainless **steel**, miscellaneous  
 (substrate; coatings compn. for friction redn. and process for  
 treating metal surfaces)

RN 12597-68-1 HCA

CN Stainless steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IC ICM B05D003-02  
 ICS B05D001-18; C23C022-07; C08J003-38

CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 37, 45

IT **Coating materials**  
 (friction; coatings compn. for friction redn. and process for  
 treating metal surfaces)

IT 79-06-1D, **Acrylamide, polymer** 79-10-7D,  
 Acrylic acid, polymer 79-39-0D, **Methacrylamide,**  
**polymer** 79-41-4D, Methacrylic acid, polymer 107-13-1D,  
 2-Propenenitrile, polymer, uses 110-16-7D, Maleic acid, polymer  
 126-98-7D, polymer  
 (film forming resin; prepn. of metal surface friction redn.  
 coatings compn. comprising)

IT **52308-11-9**  
 (substrate coatings; coatings compn. for friction redn. and  
 process for treating metal surfaces)

IT **12597-68-1**, Stainless **steel**, miscellaneous  
 (substrate; coatings compn. for friction redn. and process for  
 treating metal surfaces)

L43 ANSWER 3 OF 12 HCA COPYRIGHT 2006 ACS on STN

123:202281 Nonchromium conversion coating for metal surfaces. Ouyang,  
 Jiangbo; Reichgott, David William; Morris, Brenda Sue (Betz Europe,  
 Inc., USA). Eur. Pat. Appl. EP 648823 A1 **19950419**, 7 pp.  
 DESIGNATED STATES: R: AT, BE, DE, ES, FR, GB, IE, IT, NL, PT.  
 (English). CODEN: EPXXDW. APPLICATION: EP 1994-306767 19940915.  
 PRIORITY: US 1993-137644 19931015.

AB The title compn. for metal surfaces such as Al, **steel**,  
 galvanized **steel** and Zn-Al **steel** comprises an

aq. soln. of an anionic acrylamide-acrylic acid copolymer, a water-sol. inorg. silicate, and an organofunctional silane. Galvanized **steel** was treated with aq. soln. of Cyanamer A 370 1.25, sodium metasilicate 1.6, and Hydrosil 2627 10% and primed with **epoxy** and top coated with silicone **polyester** to give coatings having wedge bend (0 = perfect) loss 18 mm and scribe rating (neutral salt spray test 500 h; 10 = best) 6.5, vs. 23 and 9.5, resp., for a Cr conversion coating.

IT 11146-15-9 12597-69-2, **Steel**,  
miscellaneous

(aq. nonchromium conversion coating for metal surfaces)

RN 11146-15-9 HCA

CN Aluminum alloy, base, Al 97-98,Mn 1.0-1.5,Fe 0-0.7,Si 0-0.6,Cu 0.05-0.20,Zn 0-0.10 (AA 3003) (9CI) (CA INDEX NAME)

Component	Component	Component		
	Percent	Registry Number		
<hr/>				
Al	97	-	99	7429-90-5
Mn	1.0	-	1.5	7439-96-5
Fe	0	-	0.7	7439-89-6
Si	0	-	0.6	7440-21-3
Cu	0.05	-	0.20	7440-50-8
Zn	0	-	0.10	7440-66-6

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IC ICM C09D133-26  
ICS B05D007-14

CC 42-7 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55, 56

ST chrome free conversion coating; anticorrosion coating chrome free adhesion metal; aluminum conversion coating; **steel** conversion coating; galvanized **steel** conversion coating; galvalume conversion coating; **acrylamide copolymer** silicate silane conversion coating

IT Galvanized iron and **steel**  
(aq. nonchromium conversion coating for metal surfaces)

IT Coating materials  
(anticorrosive, conversion, **acrylamide** copolymer/silicate/silane; aq. nonchromium conversion

coating for metal surfaces)

IT 7429-90-5, Aluminum, miscellaneous **11146-15-9**  
**12597-69-2, Steel, miscellaneous**  
 (aq. nonchromium conversion coating for metal surfaces)  
 IT 919-30-2, Hydrosil 2627 6834-92-0, Sodium metasilicate  
 9003-06-9, Acrylic acid-**acrylamide copolymer**  
 25085-02-3, Cyanamer A 370  
 (aq. nonchromium conversion coating for metal surfaces)

L43 ANSWER 4 OF 12 HCA COPYRIGHT 2006 ACS on STN

116:259844 Coating of metal parts with zinc composites containing polymers. Sato, Hiroshi; Ikeda, Tsugumoto; Hisamoto, Atsushi; Yamamura, Nagisa (Kobe Steel, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 03248839 A2 **19911106** Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-49008 19900227.

AB A **steel** strip is electroplated in aq. bath contg.  $\geq 0.01\%$  (as C) of dispersed polymer with  $\geq 10$  mol% polar groups, and then coated with a glass layer  $\geq 0.1 \mu\text{m}$  thick and optionally top wax layer  $\geq 0.1 \mu\text{m}$  thick for high workability, lubricity, and corrosion resistance. The electroplating bath typically contains methylol-modified **polyacrylamides** having mol. wt. of 30,000.

IT **51396-68-0 51879-84-6 82282-18-6**  
 (coating, polymer dispersed in composite, from electrogalvanizing bath)

RN 51396-68-0 HCA

CN Zinc alloy, base, Zn,Fe (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
Zn	7440-66-6
Fe	7439-89-6

RN 51879-84-6 HCA

CN Zinc alloy, base, Zn,Ni (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
Zn	7440-66-6
Ni	7440-02-0

RN 82282-18-6 HCA  
CN Zinc alloy, base, Zn,Cr (9CI) (CA INDEX NAME)

Component	Component Registry Number
Zn	7440-66-6
Cr	7440-47-3

IT 7440-66-6 12597-69-2  
(galvanization, electro-, bath, polymer dispersed in, for  
composite alloy coating on steel strip)

RN 7440-66-6 HCA  
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 12597-69-2 HCA  
CN Steel (9CI) (CA INDEX NAME)  
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
IC ICM B32B015-04  
     ICS B32B015-08  
CC 55-6 (Ferrous Metals and Alloys)  
     Section cross-reference(s): 42  
ST polymer composite zinc coating **steel**; glass coating  
     electrogalvanized **steel**; electroplating bath zinc  
     dispersion polymer  
IT Glass, oxide  
     Waxes and Waxy substances  
         (coating, on zinc alloy composite with dispersed resin,  
         **steel** strip protection by)  
IT Polyamides, uses  
     (methylol-modified, zinc alloy composites with dispersed, in  
     electrogalvanizing of **steel** strip)  
IT Coating process  
     (with zinc alloy composites, polymer dispersed in bath for)  
IT Galvanization  
     (electro-, bath, polymer dispersed in, for composite alloy  
     coating on **steel** strip)  
IT 51396-68-0 51879-84-6 82282-18-6

(coating, polymer dispersed in composite, from electrogalvanizing bath)

IT 7440-66-6 12597-69-2

(galvanization, electro-, bath, polymer dispersed in, for composite alloy coating on **steel** strip)

L43 ANSWER 5 OF 12 HCA COPYRIGHT 2006 ACS on STN

116:216486 Primers for anticorrosive zinc (alloy) platings and process therewith. Sato, Hiroshi; Ikeda, Kouki; Hisamoto, Jun; Takee, Nagisa (Kobe Steel, Ltd., Japan). Eur. Pat. Appl. EP 472204 A2 19920226, 14 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1991-114106 19910822. PRIORITY: JP 1990-221648 19900822; JP 1990-221649 19900822.

AB Primers with good adhesion to zinc (alloy) platings are CH<sub>2</sub>:CRCOXANR<sub>1</sub>R<sub>2</sub> (A = C<sub>n</sub>H<sub>2n</sub>; R = H, Me; R<sub>1</sub>, R<sub>2</sub> = H, alkyl; X = O, NH; n > 0) polymers modified by ≥ 5 mol% **epoxides**. Thus, a **steel** sheet was treated with 0.6% (based on C) acrylamide-dimethylaminoethyl methacrylate-epichlorohydrin (20 mol%) reaction product, and electrodeposited with Zn to give an anticorrosive sheet with good press formability.

IT 7440-66-6, Zinc, uses 37345-61-2

37346-11-5 52975-39-0 54134-51-9  
(plating, primers for, **epoxy**-modified aminoalkyl (meth)acrylate or (meth)**acrylamide polymers** as)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 37345-61-2 HCA

CN Iron alloy, nonbase, Fe, Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number

---

Fe 7439-89-6

Zn 7440-66-6

RN 37346-11-5 HCA

CN Nickel alloy, nonbase, Ni, Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
Ni	7440-02-0
Zn	7440-66-6

RN 52975-39-0 HCA  
CN Manganese alloy, nonbase, Mn,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
Mn	7439-96-5
Zn	7440-66-6

RN 54134-51-9 HCA  
CN Chromium alloy, nonbase, Cr,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
Cr	7440-47-3
Zn	7440-66-6

IC ICM C25D003-22  
ICS C25D003-56; C25D003-20  
CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55  
ST zinc plating primer **epoxy polyacrylamide**;  
aminoalkyl methacrylate **epoxy** product primer; acrylamide  
methacrylate **epoxy** product primer  
IT Acrylic polymers, preparation  
(aminoalkyl (meth)acrylamide- or (meth)acrylate-contg.  
**epoxide**-modified, as primers for zinc (alloy) platings)  
IT Coating materials  
(primers, **epoxy**-modified aminoalkyl (meth)acrylate or  
(meth)**acrylamide polymers**, for zinc (alloy)  
platings)  
IT 7440-66-6, Zinc, uses 37345-61-2  
37346-11-5 52975-39-0 54134-51-9  
(plating, primers for, **epoxy**-modified aminoalkyl

(meth)acrylate or (meth)acrylamide polymers  
as)

L43 ANSWER 6 OF 12 HCA COPYRIGHT 2006 ACS on STN

116:44783 Polymer-coated galvanized **steel** strips excellent in corrosion resistance and paint adhesion. Sato, Hiroshi; Ikeda, Tsugumoto; Hisamoto, Atsushi; Yamamura, Nagisa (Kobe Steel, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 03100183 A2 **19910425** Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-238510 19890913.

AB The galvanized **steel** strips after descaling and pickling is treated with an chromate soln. to deposit Cr .apprx.50 mg/m<sup>2</sup>, and then coated with 0.1-5 wt.% (based on C) of a polymer layer contg. hydrophilic groups (e.g., amido, **epoxy**, sulfonyl, or amino)  $\geq$ 10 mol% in the polymer. Thus, a galvanized **steel** strip was chromated and then coated with 0.1 wt.% of a N-methyloacrylamide polymer layer contg. 10 mol% of the amido group. The coated strip showed no rust in a NaCl soln. spray test for  $\geq$ 100 h.

IT **12597-69-2, Steel, miscellaneous**  
(chromating and hydrophilic polymer coating of galvanized, for increased corrosion resistance and paint adhesion)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT **51396-68-0 51879-84-6**  
(coating with, of **steel** strips, with subsequent chromating and hydrophilic polymer coating, for increased corrosion resistance and paint adhesion)

RN 51396-68-0 HCA

CN Zinc alloy, base, Zn,Fe (9CI) (CA INDEX NAME)

Component      Component  
                  Registry Number

=====+=====

Zn              7440-66-6

Fe              7439-89-6

RN 51879-84-6 HCA

CN Zinc alloy, base, Zn,Ni (9CI) (CA INDEX NAME)

Component      Component

## Registry Number

=====+=====

Zn 7440-66-6

Ni 7440-02-0

IC ICM C23C028-00

ICS C23C022-24; C25D005-26

CC 55-6 (Ferrous Metals and Alloys)

Section cross-reference(s): 42

ST corrosion resistance galvanized **steel** coating; paint  
adhesion polymer coating **steel**; chromating polymer coating  
galvanized **steel**IT Galvanized iron and **steel**(chromating and hydrophilic polymer coating of, for increased  
corrosion resistance and paint adhesion)

IT Coating process

(chromating, of galvanized **steel**, and subsequent  
hydrophilic polymer coating, for increased corrosion resistance  
and paint adhesion)

IT 12597-69-2, Steel, miscellaneous

(chromating and hydrophilic polymer coating of galvanized, for  
increased corrosion resistance and paint adhesion)IT 26374-25-4, N-Methylol **acrylamide polymer**(coating with, of galvanized **steel** after chromating,  
for increased corrosion resistance and paint adhesion)

IT 51396-68-0 51879-84-6

(coating with, of **steel** strips, with subsequent  
chromating and hydrophilic polymer coating, for increased  
corrosion resistance and paint adhesion)

L43 ANSWER 7 OF 12 HCA COPYRIGHT 2006 ACS on STN

114:64437 Zinc-plated materials with good corrosion resistance. Sato,  
Hiroshi; Ikeda, Tsugumoto; Hisamoto, Atsushi; Yamamura, Nagisa;  
Nakamura, Shoji (Kobe Steel, Ltd., Japan). Jpn. Kokai Tokkyo Koho  
JP 02205699 A2 19900815 Heisei, 6 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1989-25575 19890202.AB The title materials are prep'd. by forming water-insol. fine  
particle-contg. Zn(alloy) layers on metallic substrates and covering  
with N-methylol (10-200 mol%)-contg. (meth)**acrylamide**  
**polymers** to an amt. of 10-3-10% C. Thus, a **steel**  
panel was plated with 20 g/m<sup>2</sup> Zn-contg. 8% SiO<sub>2</sub> and covered with 2  
g/m<sup>2</sup> N-methylolacrylamide polymers (contg. 50 mol% methylol group)

to a 5% C to give a panel showing good press formability and coatability to melamine-alkyd resin compns.

IT 7440-66-6, Zinc, uses and miscellaneous 37346-11-5  
(plating, water-insol. particle-contg., on metals, methylol(meth)  
**acrylamide polymer-covered**)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

## Zn

RN 37346-11-5 HCA

CN Nickel alloy, nonbase, Ni,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
====	=====

Ni	7440-02-0
Zn	7440-66-6

IC ICM C25D015-02

CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55, 56

IT Galvanized iron and **steel**  
(plating, water-insol. particle-contg., on metals, methylol(meth)  
**acrylamide polymer-covered**)

IT Coating materials  
(anticorrosive, methylol(meth)**acrylamide polymers**, on water-insol. particle-contg.  
zinc(alloy)-plated metals)

IT 7440-66-6, Zinc, uses and miscellaneous 37346-11-5  
(plating, water-insol. particle-contg., on metals, methylol(meth)  
**acrylamide polymer-covered**)

IT 1317-33-5, Molybdenum sulfide (MoS<sub>2</sub>), uses and miscellaneous  
1344-28-1, Alumina, uses and miscellaneous 7631-86-9, Silica, uses  
and miscellaneous 10043-11-5, Boron nitride, uses and  
miscellaneous  
(water-insol., zinc(alloys) contg., on metals, methylol(meth)  
**acrylamide polymer-covered**)

**acrylamide polymers.** Sato, Hiroshi; Ikeda, Tsugumoto; Hisamoto, Atsushi; Yamamura, Nagisa (Kobe Steel, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02163400 A2 19900622 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-319176 19881216.

AB The title compns. forming good cryst. films and showing good adhesion to metal substrates and press formability contain 0.001-10% (meth)**acrylamide polymers** contg. 120-200 mol% (based on monomers) N-methylol groups. Thus, a **steel** panel was plated with a Zn<sup>2+</sup> soln. contg. 0.5% **acrylamide polymer** having 180 mol% methylol groups to give a panel with good anticorrosion, coatability, and press formability.

IT 7440-66-6, Zinc, uses and miscellaneous 37346-11-5  
(plating, contg. (meth)**acrylamide polymers**  
having methylol groups, anticorrosive)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 37346-11-5 HCA

CN Nickel alloy, nonbase, Ni,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number
Ni	7440-02-0
Zn	7440-66-6

IC ICM C25D015-02

CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 55, 56

ST methylol contg **polyacrylamide** zinc plating; anticorrosion  
**polyacrylamide** contg zinc plating

IT Galvanized iron and **steel**  
(plating, contg. (meth)**acrylamide polymers**  
having methylol groups, anticorrosive)

IT Coating materials  
(anticorrosive, zinc (alloy) platings contg. (meth)  
**acrylamide polymers** having methylol groups for)

IT 7440-66-6, Zinc, uses and miscellaneous 37346-11-5

(plating, contg. (meth)acrylamide polymers  
having methylol groups, anticorrosive)

IT 79-06-1D, Acrylamide, polymers, N-methylol  
group-contg. 79-39-0D, Methacrylamide, polymers  
, N-methylol group-contg.  
(zinc (alloy) platings contg., anticorrosive)

L43 ANSWER 9 OF 12 HCA COPYRIGHT 2006 ACS on STN

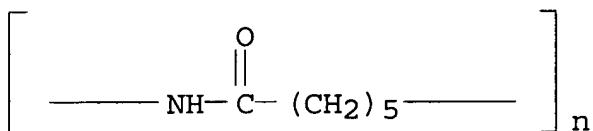
113:62897 Test of complexing agents for the concentration of metal ion  
solutions by ultrafiltration. Waeschke, Holger (Sekt.  
Verfahrenstech., Tech. Hochsch. Koethen, Koethen, DDR-4370, Ger.  
Dem. Rep.). Zeitschrift fuer Chemie, 30(3), 101-2 (German)  
1990. CODEN: ZECEAL. ISSN: 0044-2402.

AB Various complexing agents were tested for the concn. of 10-4M solns.  
of CuSO<sub>4</sub>, NiSO<sub>4</sub>, ZnSO<sub>4</sub>, and AgNO<sub>3</sub> by ultrafiltration  
through cellulose acetate, polyamide, or polyurethane  
membranes. Sufficient filtration rates and metal ion retention  
capacities were attained with linear oligomeric ε-  
caprolactam, poly(acrylic acid), allylsulfonate-acrylate copolymer,  
allylsulfonic acid-acrylic acid-acrylamide  
copolymer, Na polyvinyl sulfonate, gelatin.

IT 25038-54-4, Nylon 6, uses and miscellaneous  
(oligomeric complexing agent, for metal ion recovery from  
wastewater by ultrafiltration)

RN 25038-54-4 HCA

CN Poly[imino(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



IT 7440-66-6P, Zinc, preparation  
(recovery of, from wastewaters, by complexing and  
ultrafiltration)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

CC 54-2 (Extractive Metallurgy)  
 Section cross-reference(s): 60  
 IT Polyamides, uses and miscellaneous  
     Urethane polymers, uses and miscellaneous  
       (membranes, ultrafiltration, for metal ion recovery from wastewater)  
 IT 25038-54-4, Nylon 6, uses and miscellaneous  
       (oligomeric complexing agent, for metal ion recovery from wastewater by ultrafiltration)  
 IT 7440-02-0P, Nickel, preparation 7440-22-4P, Silver, preparation  
 7440-50-8P, Copper, preparation 7440-66-6P, Zinc,  
 preparation  
       (recovery of, from wastewaters, by complexing and ultrafiltration)

L43 ANSWER 10 OF 12 HCA COPYRIGHT 2006 ACS on STN  
 103:199460 Surface-treated **steel** with excellent conversion  
 coatability. (Kawasaki Steel Corp., Japan). Jpn. Kokai Tokkyo Koho  
 JP 60131977 A2 19850713 Showa, 5 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 1983-240701 19831219.

AB Cold-rolled **steel** strip with or without a Zn or Zn-alloy layer has an electrodeposited Fe layer (0.1-10 g/m<sup>2</sup>) contg. 0.005-1% C for improvement of conversion coating. Thus, a cold-rolled plate of **steel** SPCC [39462-15-2] was electroplated at 50° and pH 3 in bath contg. FeCl<sub>2</sub> 150, KCl 200, and **polyacrylamide** 3-5 g/L, to form Fe layer (3 g/m<sup>2</sup>) contg. 0.007% C. The electroplated plate was spray-coated with BT 3128 to form a phosphate film having grain size 5-10, vs. 14-18 $\mu$  without the electroplating.

IT 39462-15-2, uses and miscellaneous  
       (electroplating of, for phosphate conversion treatment)

RN 39462-15-2 HCA

CN Steel, (JIS SPCC) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
=====+=====+=====		
Fe	99 - 100	7439-89-6
Mn	0 - 0.50	7439-96-5
C	0 - 0.12	7440-44-0
S	0 - 0.045	7704-34-9
P	0 - 0.040	7723-14-0

IT 77025-17-3 88433-04-9

(steel coated with, electroplating of, for phosphate conversion coating)

RN 77025-17-3 HCA

CN Zinc alloy, base, Zn 87,Ni 13 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Zn	87	7440-66-6
Ni	13	7440-02-0

RN 88433-04-9 HCA

CN Zinc alloy, base, Zn 70-90,Fe 10-30 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Zn	70 - 90	7440-66-6
Fe	10 - 30	7439-89-6

IC ICM C23C022-78

CC 55-6 (Ferrous Metals and Alloys)

Section cross-reference(s): 72

ST steel electroplating conversion coating; iron electroplate  
steel conversion coating; zinc coated steel  
conversion coating; polyacrylamide electroplating  
steel

IT Galvanized iron and steel

(electroplating of, for phosphate conversion coating)

IT Coating process

(conversion, of steel, precoating for phosphate)

IT 39462-15-2, uses and miscellaneous

(electroplating of, for phosphate conversion treatment)

IT 57140-07-5 77025-17-3 88433-04-9

(steel coated with, electroplating of, for phosphate conversion coating)

L43 ANSWER 11 OF 12 HCA COPYRIGHT 2006 ACS on STN

100:140834 Mechanism of the formation of polymer films on metals during electrolysis of aqueous solutions of acrylamide and formaldehyde.

Kolzunova, L. G.; Kovarskii, N. Ya. (Inst. Khim., Vladivostok, USSR). Elektrokhimiya, 20(2), 154-9 (Russian) 1984.

CODEN: ELKKAX. ISSN: 0424-8570.

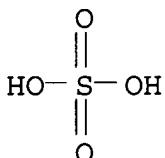
AB The formation of acrylamide-formaldehyde polymer [25103-80-4] coatings on a **steel** cathode during electrolysis of aq. solns. contg. acrylamide (I) [79-06-1], HCHO [50-00-0], and ZnCl<sub>2</sub> proceeds via polymn. initiated by the electrochem. redn. of H<sup>+</sup> at cathode potential E <-1.1 V, or a I-Zn complex at E ≥-1.1 V. The rate of deposition as a function of E is very small at E <-1.1V but reaches a max. at E .apprx.-1.2 V. The rate decreases sharply upon removal of ZnCl<sub>2</sub>, increases with increasing concns. of ZnCl<sub>2</sub>, I ( $\leq$ 3 M), and HCHO ( $\geq$ 5 M), and is affected insignificantly by changes in pH ( $\leq$ 6).

IT 7733-02-0

(electrochem. polymn. of acrylamide with formaldehyde in presence of, during cathodic coating)

RN 7733-02-0 HCA

CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)



● Zn

CC 42-2 (Coatings, Inks, and Related Products)

Section cross-reference(s): 35

ST electrochem **polymn acrylamide** formaldehyde coating; **steel** cathode acrylamide formaldehyde coating; potential cathode acrylamide formaldehyde coating

IT **Coating process**

(cathodic, via electrochem. polymn. of acrylamide with formaldehyde)

IT 25103-80-4

(coating with, of **steel** cathodes, via electrochem. polymn.)

IT 123-31-9, uses and miscellaneous 7447-41-8, uses and miscellaneous 7646-85-7, uses and miscellaneous 7733-02-0

(electrochem. polymn. of acrylamide with formaldehyde in presence of, during cathodic coating)

L43 ANSWER 12 OF 12 HCA COPYRIGHT 2006 ACS on STN

55:20209 Original Reference No. 55:4006c-f Paint-adherent primer coatings for zinc. Ulrich, Erwin W. (Minnesota Mining and Manufacturing Co.). US 2958611 19601101 (Unavailable).

APPLICATION: US .

AB Primer coatings which dry quickly, adhere to Zn and galvanized Fe, and promote the adherence of paint, are formed by the application of a thin film of dil. soln. or dispersion of a resinous interpolymer of a long-chain alkyl acrylate ester with a small proportion of acrylic acid. The alc. mols. may contain 1-14 C atoms, and most of them should have chains of at least 4 C atoms terminating at the hydroxyl O atom. Amyl and isoctyl alcs. are preferred. The acrylic acid in the polymerization formula is preferably 5-10% of the total acid and ester. Acrylamide, methacrylic acid, methacrylamide, and itaconic acid, but not Et acrylate, may be substituted for acrylic acid. The esters are preferably polymerized to a Brookfield viscosity of 0.9-1.1 cp. Suitable solvents are xylene, heptane, and a 1:1:4 mixt. of turpentine, Cellosolve, and mineral spirits, in all of which the polymer concn. may be 4-6%. When a dispersion in H<sub>2</sub>O is used, a wetting agent should be added, and the polymer concn. may be 16%. The dry film on the Zn surface must be 0.00005-0.0002 in. thick for best results; thicker films are often wrinkled. For example, an effective polymer was prep'd. by agitating at 55-60° in a glass vessel a mixt. of EtOAc 60, fusel-oil acrylate 36, acrylic acid 4, and Bz2O2 0.3 part by wt. The fusel oil contained primary AmOH 55-80, primary BuOH 15-45, and ProH 0-5%. During the polymerization some addnl. EtOAc and Bz2O2 were added. The cooled polymer was dissolved in xylene to 5% concn., and the soln. was brushed on fresh, clean, galvanized Fe which was subsequently painted. This paint adhered well on outdoor exposure while another sample not primed but otherwise similarly painted and exposed, blistered badly.

IT 7440-66-6, Zinc

(coatings for, from acrylate ester interpolymers, paint-adherent priming)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

CC 26 (Paints, Varnishes, Lacquers, and Inks)

IT Galvanized **steel**  
(coatings for, from acrylate ester interpolymers, paintadherent primer)

IT **Coating(s)**  
(priming, for Zn, from acrylate ester interpolymers, paint adhesion-improving)

IT **7440-66-6**, Zinc  
(coatings for, from acrylate ester interpolymers, paint-adherent priming)

IT 27401-12-3, **Acrylamide, polymer with isooctyl acrylate**  
(primer coatings for Zn from)

=> D L44 1-25 CBIB ABS HITSTR HITIND

L44 ANSWER 1 OF 25 HCA COPYRIGHT 2006 ACS on STN  
133:200673 Reversible electrochemical mirror (REM) with improved electrolytic solution. Tench, D. Morgan; Warren, Leslie F., Jr.; Cunningham, Michael A. (Rockwell Science Center, LLC, USA). U.S. US 6111685 A 20000829, 13 pp., Cont.-in-part of U.S. Ser. No. 333,385. (English). CODEN: USXXAM. APPLICATION: US 1999-356730 19990719. PRIORITY: US 1997-994412 19971219; US 1999-333385 19990615.

AB Reversible electrochem. mirrors comprising an electrolytic soln. held between 2 electrodes,  $\geq 1$  of which is transparent are described in which the electrolytic soln. comprises a solvent, a source of cations of  $\geq 1$  electrodepositable mirror metal,  $\geq 1$  halide and/or pseudohalide compd. having cations that are not electroactive in the voltage range over which the device is operated, the ratio of the total molar concn. of halide and/or pseudohalide anions (where the total is the aggregate of anions originating from the halide and/or pseudohalide compd. and anions originating from the source of the electrodepositable mirror metal cations) to the total molar concn. of the electrodepositable mirror metal cations being greater than 6:1. The electrolytic solns. may also incorporate gelling agents. The high molar concn. ratio of

halide and/or pseudohalide anions to electrodepositable metal ions in the electrolyte provides the inherent electrolyte stability, high deposit quality, good deposit erasure, and long cycle life needed for practical applications.

IT 9003-05-8, **Polyacrylamide**

(gelling agent; reversible electrochem. mirrors with electrolytic solns. with high ratio of halide and/or pseudohalide anions to electrodepositable metal ions)

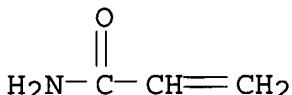
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 12597-68-1, **Stainless steel**, uses

(reversible electrochem. mirrors with electrolytic solns. with high ratio of halide and/or pseudohalide anions to electrodepositable metal ions)

RN 12597-68-1 HCA

CN Stainless steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 7440-66-6, **Zinc**, uses

(reversible electrochem. mirrors with electrolytic solns. with high ratio of halide and/or pseudohalide anions to electrodepositable metal ions)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IC ICM G02F001-153

INCL 359267000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 72

IT 9000-30-0, Guar gum 9000-65-1, Tragacanth 9000-69-5, Pectin  
9002-86-2, Polyvinylchloride 9002-89-5, Polyvinylalcohol  
9003-01-4D, Polyacrylic acid, derivs. 9003-05-8,  
**Polyacrylamide** 9003-39-8, Polyvinylpyrrolidone  
9003-53-6D, derivs. 9004-34-6D, Cellulose, derivs., uses  
9005-25-8, Starch, uses 9005-32-7, Alginic acid 9011-14-7,  
Polymethylmethacrylate 11138-66-2, Xanthan gum 24937-79-9  
110320-40-6, Polypropylenecarbonate  
(gelling agent; reversible electrochem. mirrors with electrolytic solns. with high ratio of halide and/or pseudohalide anions to electrodedepositable metal ions)

IT 1312-43-2, Indium oxide 1332-29-2, Tin oxide 7429-90-5,  
Aluminum, uses 7439-88-5, Iridium, uses 7439-98-7, Molybdenum,  
uses 7440-02-0, Nickel, uses 7440-04-2, Osmium, uses  
7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-15-5,  
Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium,  
uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses  
7440-47-3, Chromium, uses 7440-57-5, Gold, uses 7440-58-6,  
Hafnium, uses 7440-67-7, Zirconium, uses 12597-68-1,  
Stainless **steel**, uses 12673-86-8, Antimony tin oxide  
37275-76-6, Aluminum zinc oxide 50926-11-9, Indium tin oxide  
72779-38-5, Aluminum tin oxide 98743-33-0, Tin fluoride oxide  
117944-65-7, Indium zinc oxide 174559-04-7, Indium fluoride oxide  
209400-79-3, Phosphorus tin oxide  
(reversible electrochem. mirrors with electrolytic solns. with high ratio of halide and/or pseudohalide anions to electrodedepositable metal ions)

IT 540-72-7, Sodium thiocyanate 7439-92-1, Lead, uses 7439-97-6,  
Mercury, uses 7440-22-4, Silver, uses 7440-28-0, Thallium, uses  
7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-43-9,  
Cadmium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc,  
uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses  
7447-41-8, Lithium chloride, uses 7681-82-5, Sodium iodide, uses  
7783-93-9, Silver perchlorate 7783-96-2, Silver iodide  
(reversible electrochem. mirrors with electrolytic solns. with high ratio of halide and/or pseudohalide anions to electrodedepositable metal ions)

(Institutul de Cercetari pentru Protectii Anticorozive, Lacuri si Vopsele, "ICEPALV" S.A., Bucuresti, Rom.). Rom. RO 111090 B3  
**19960628**, 3 pp. (Romanian). CODEN: RUXXA3. APPLICATION:  
 RO 1994-9400665 19940420.

**AB** The pigment is produced by pptn., filtration, drying, calcination, and grinding of a mixt. of Co, Al, Zn, and Cr salts, phosphates, silicates, by treatment with NaOH or Na<sub>2</sub>CO<sub>3</sub>, to obtain pigment particles contg. 10-50% CoO, 40-80% Al<sub>2</sub>O<sub>3</sub>, 3-8% ZnO, 1-10% P<sub>2</sub>O<sub>5</sub>, 0-5% Cr<sub>2</sub>O<sub>3</sub>, and 0-5% SiO<sub>2</sub>, with particle size of 48  $\mu\text{m}$ . The pptn. of the mixt. is carried out at ambient temp. using a **polyacrylamide** flocculant. In a stirred stainless steel reactor were mixed 400 L aluminum sulfate soln. 11 kg Co chloride, 600 mL phosphoric acid, and 2 kg **zinc sulfate**, then 250 L of a 15% aq. soln. of Na carbonate were added and the mixt. was stirred for 30-45 min to attain pH of 8-8.5. The suspension was dild. to 1000 L then 2 L of 0.5% soln. of **polyacrylamide** was added; after settling, filtration, drying at 100°, grinding and calcination of the ppt. at 1100-1200°, a blue pigment of compn. 30% CoO, 60% Al<sub>2</sub>O<sub>3</sub>, 5% ZnO, and 5% P<sub>2</sub>O<sub>5</sub>, was obtained. The pigment is stable to temps. of about 1000° and is suitable for use in lacquers and enamels, esp. for ceramics.

**IT 9003-05-8, Polyacrylamide**

(flocculant; process for manuf. of blue cobalt pigment with high temp. stability for use in lacquers and varnishes and ceramic enamels)

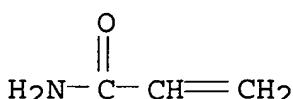
**RN 9003-05-8 HCA**

**CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)**

**CM 1**

**CRN 79-06-1**

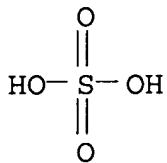
**CMF C3 H5 N O**



**IT 7733-02-0, Zinc sulfate**

(process for manuf. of blue cobalt pigment with high temp. stability for use in lacquers and varnishes and ceramic enamels)

RN 7733-02-0 HCA  
 CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)



● Zn

IC ICM C09C001-64  
 CC 42-6 (Coatings, Inks, and Related Products)  
 IT 9003-05-8, **Polyacrylamide**  
     (flocculant; process for manuf. of blue cobalt pigment with high  
     temp. stability for use in lacquers and varnishes and ceramic  
     enamels)  
 IT 7646-79-9, Cobalt chloride, processes   7664-38-2, Phosphoric acid,  
   processes 7733-02-0, Zinc sulfate  
   10043-01-3, Aluminum sulfate  
     (process for manuf. of blue cobalt pigment with high temp.  
     stability for use in lacquers and varnishes and ceramic enamels)

L44 ANSWER 3 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 129:206940 Synergistic and biocidal effects of 1-hydroxyethane-1,1-diphosphate, Zn<sup>2+</sup> and **Polyacrylamide** on the inhibition of corrosion of mild **steel** in neutral aqueous environment.

Rajendran, S.; Apparao, B. V.; Palaniswamy, N. (Department of Chemistry, GTN, Arts College (Autonomous), Tamilnadu, India). Anti-Corrosion Methods and Materials, 45(4), 256-261 (English) 1998. CODEN: ACMEBL. ISSN: 0003-5599. Publisher: MCB University Press.

AB The formulation consisting of 300 ppm 1-hydroxyethane-1,1-diphosphonic acid (HEDP), 50 ppm **Polyacrylamide** (PAA) and 50 ppm Zn<sup>2+</sup> offered 99% corrosion inhibition and 99-99.9% biocidal inhibition to mild **steel** in neutral aq. environment contg. 60 ppm Cl<sup>-</sup>, a situation commonly encountered in cooling water systems. The nature of the protective film formed on the metal surface was analyzed using x-ray diffraction, UV-visible reflectance, FTIR and luminescence spectra. The film was

luminescent and consisted of Fe<sup>2+</sup>-HEDP complex, Fe<sup>2+</sup>-PAA complex and Zn(OH)<sub>2</sub>.

IT 7440-66-6, Zinc, uses 9003-05-8,

**Polyacrylamide**

(synergistic and biocidal effects of hydroxyethanediphosphate and zinc and **polyacrylamide** on inhibition of corrosion of mild **steel** in neutral water)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

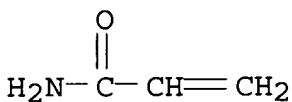
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 11121-90-7, Carbon **steel**, processes

(synergistic and biocidal effects of hydroxyethanediphosphate and zinc and **polyacrylamide** on inhibition of corrosion of mild **steel** in neutral water)

RN 11121-90-7 HCA

CN Steel, carbon (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CC 61-8 (Water)

Section cross-reference(s): 54

ST synergistic biocidal effect hydroxyethanediphosphate zinc polycrylamide; biocide hydroxyethanediphosphate zinc polycrylamide water **steel**; hydroxyethanediphosphate corrosion inhibition mild **steel** water; zinc corrosion inhibition mild **steel** water; polycrylamide corrosion inhibition mild **steel** water

IT Cooling water

Corrosion inhibitors

Industrial process waters

(synergistic and biocidal effects of hydroxyethanediphosphate and zinc and **Polyacrylamide** on inhibition of corrosion of mild **steel** in neutral water)

IT 2809-21-4, 1-Hydroxyethane-1,1-diphosphonic acid **7440-66-6**, Zinc, uses **9003-05-8, Polyacrylamide**  
(synergistic and biocidal effects of hydroxyethanediphosphate and zinc and **Polyacrylamide** on inhibition of corrosion of mild **steel** in neutral water)

IT **11121-90-7**, Carbon **steel**, processes  
(synergistic and biocidal effects of hydroxyethanediphosphate and zinc and **Polyacrylamide** on inhibition of corrosion of mild **steel** in neutral water)

L44 ANSWER 4 OF 25 HCA COPYRIGHT 2006 ACS on STN

129:138898 Synergistic and biocidal effects of a phosphonate-metal ion-biocide system on the inhibition of corrosion of mild **steel** in neutral aqueous environment. Rajendran, Susai; Apparao, B. V.; Palaniswamy, N. (Department of Chemistry, G.T.N. Arts College (Autonomous), Dindigul, 624 005, India). Corrosion and Its Control, Proceedings of International Conference on Corrosion, Mumbai, Dec. 3-6, 1997, Meeting Date 1997, Volume 2, 1061-1066. Editor(s): Khanna, A. S.; Totlani, M. K.; Singh, S. K. Elsevier: Amsterdam, Neth. (English) 1998. CODEN: 66JLAQ.

AB The formulation consisting of 300 ppm 1-hydroxyethane-1,1-diphosphonic acid (HEDP), 50 ppm **Polyacrylamide** (PAA) and 50 ppm Zn<sup>2+</sup> offered 99% corrosion inhibition and 99 to 99.9% biocidal inhibition to mild **steel** in neutral aq. environment contg. 60 ppm Cl-1, a situation commonly encountered in cooling water systems. The nature of the protective film formed on the metal surface was analyzed using FTIR and luminescence spectra. The film was luminescent and consists of Fe<sup>2+</sup>-HEDP complex, Fe<sup>2+</sup>-PAA complex and Zn(OH)<sub>2</sub>.

IT **7440-66-6**, Zinc, uses **9003-05-8, Polyacrylamide**  
(synergistic and biocidal effects of a phosphonate-metal ion-biocide system on the inhibition of corrosion of mild **steel** in neutral aq. environment)

RN 7440-66-6 HCA

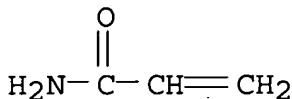
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IT 11121-90-7, Carbon **steel**, processes  
 (synergistic and biocidal effects of a phosphonate-metal ion-biocide system on the inhibition of corrosion of mild **steel** in neutral aq. environment)

RN 11121-90-7 HCA  
 CN Steel, carbon (9CI) (CA INDEX NAME)  
 \*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CC 55-10 (Ferrous Metals and Alloys)  
 Section cross-reference(s): 47  
 ST **steel** biocorrosion inhibitor HEDP **polyacrylamide**  
 zinc

IT Corrosion  
 (biocorrosion; synergistic and biocidal effects of a phosphonate-metal ion-biocide system on the inhibition of corrosion of mild **steel** in neutral aq. environment)

IT Corrosion inhibitors  
 (synergistic and biocidal effects of a phosphonate-metal ion-biocide system on the inhibition of corrosion of mild **steel** in neutral aq. environment)

IT 2809-21-4, Hedp 7440-66-6, Zinc, uses 9003-05-8,  
**Polyacrylamide**  
 (synergistic and biocidal effects of a phosphonate-metal ion-biocide system on the inhibition of corrosion of mild **steel** in neutral aq. environment)

IT 11121-90-7, Carbon **steel**, processes  
 (synergistic and biocidal effects of a phosphonate-metal

ion-biocide system on the inhibition of corrosion of mild steel in neutral aq. environment)

L44 ANSWER 5 OF 25 HCA COPYRIGHT 2006 ACS on STN

127:100979 Electrolytically chromated zinc-plated **steel** sheets with excellent lubricity and corrosion resistance and manufacture thereof. Nakajima, Seiji; Takao, Kenji; Totsuka, Nobuo (Kawasaki Steel Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09157893 A2 19970617 Heisei, 15 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1995-315125 19951204.

AB Zinc- or zinc alloy-plated **steel** sheets have chromate layers on them. The chromate layer is obtained by electrolysis of the zinc- or zinc alloy-plated **steel** sheet in a chromating bath contg. (1) an aq. wax particle dispersion with av. mol. wt. 200-15000, m.p. 50-180°, acid value 0-100 KOH/g, and av. particle size 0.01-20  $\mu\text{m}$  and (2) Ni<sup>2+</sup> and/or Co<sup>2+</sup>, and optional (a) 1-300 g/L (as solid) of silica, and (b) 0.1-20 g/L of PO<sub>4</sub><sup>3-</sup>.

IT 12597-69-2, **Steel**, uses  
(electrolytically chromated zinc-electroplated **steel** sheets with excellent lubricity and corrosion resistance and manuf. thereof)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 7440-66-6, Zinc, properties

(electrolytically chromated zinc-electroplated **steel** sheets with excellent lubricity and corrosion resistance and manuf. thereof)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8, Polyacrylamide

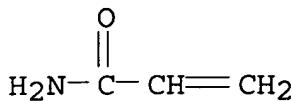
(electrolytically chromating of zinc-electroplated **steel** sheets in chromating bath contg.)

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CRN 79-06-1

CMF C3 H5 N O



IC ICM C25D011-38

CC 72-8 (Electrochemistry)

Section cross-reference(s): 55, 56

ST electrolytically chromated zinc plated **steel** sheet

IT Electrodeposition

(electrolytically chromated zinc-electroplated **steel** sheets with excellent lubricity and corrosion resistance and manuf. thereof)

IT Acrylic polymers, uses

Paraffin waxes, uses

Polyoxyalkylenes, uses

(electrolytically chromating of zinc-electroplated **steel** sheets in chromating bath contg.)

IT Hydrocarbon waxes, uses

(microcryst.; electrolytically chromating of zinc-electroplated **steel** sheets in chromating bath contg.)

IT Chromating

(of zinc-plated **steel** sheets)

IT Zinc alloy

(electrolytically chromated zinc alloy-electroplated **steel** sheets with excellent lubricity and corrosion resistance and manuf. thereof)

IT 12597-69-2, Steel, uses

(electrolytically chromated zinc-electroplated **steel** sheets with excellent lubricity and corrosion resistance and manuf. thereof)

IT 7440-66-6, Zinc, properties 11104-59-9, Chromate

(electrolytically chromated zinc-electroplated **steel** sheets with excellent lubricity and corrosion resistance and manuf. thereof)

IT 7631-86-9, Silica, uses 9003-05-8, Polyacrylamide

14265-44-2, Phosphate, uses 25322-68-3

(electrolytically chromating of zinc-electroplated **steel** sheets in chromating bath contg.)

IT 7440-48-4, Cobalt, uses  
(electrolytically chromating of zinc-electroplated **steel**  
sheets in chromating bath contg. Co<sup>2+</sup>)

IT 7440-02-0, Nickel, uses  
(electrolytically chromating of zinc-electroplated **steel**  
sheets in chromating bath contg. Ni<sup>2+</sup>)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene  
(wax; electrolytically chromating of zinc-electroplated  
**steel** sheets in chromating bath contg.)

L44 ANSWER 6 OF 25 HCA COPYRIGHT 2006 ACS on STN

124:205072 Monitoring of coating weight in dried-in-place non-chrome  
**polyacrylamide** based treatments for metals. Ouyang,  
Jiangbo; Harpel, William L. (Betz Laboratories, Inc., USA). Can.  
Pat. Appl. CA 2143401 AA 19950916, 18 pp. (English).  
CODEN: CPXXEB. APPLICATION: CA 1995-2143401 19950224. PRIORITY: US  
1994-213414 19940315; US 1994-307970 19940916.

AB An NH<sub>4</sub><sup>+</sup> hexafluorotitanate (0.1-10%) tracer is added to the title  
conversion coating. The tracer remains proportional to the polymer  
matrix when the coating is analyzed by x-ray fluorescence.

IT 7440-66-6, Zinc, miscellaneous 12597-69-2,  
**Steel**, miscellaneous  
(monitoring of coating wt. in dried-in-place non-chrome  
**polyacrylamide** based treatments for metals)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9003-05-8, **Polyacrylamide**  
(monitoring of coating wt. in dried-in-place non-chrome  
**polyacrylamide** based treatments for metals)

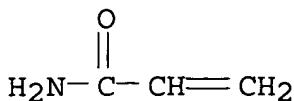
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IC ICM C09D133-26  
 ICS C09D007-00; C08K003-28; G01N023-223; G01G017-00; G01G009-00  
 CC 42-5 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55, 56  
 ST coating wt proportional titanium conversion coating; ammonium hexafluorotitanate tracer **polyacrylamide** conversion coating; x ray fluorescence monitor coating wt  
 IT 7429-90-5, Aluminum, miscellaneous **7440-66-6**, Zinc, miscellaneous **12597-69-2**, Steel, miscellaneous  
     (monitored of coating wt. in dried-in-place non-chrome **polyacrylamide** based treatments for metals)  
 IT **9003-05-8**, Polyacrylamide  
     (monitored of coating wt. in dried-in-place non-chrome **polyacrylamide** based treatments for metals)  
 IT 16962-40-6, Ammonium hexafluorotitanate  
     (tracer; monitored of coating wt. in dried-in-place non-chrome **polyacrylamide** based treatments for metals)

L44 ANSWER 7 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 119:208615 Anticorrosion and antifouling agent for surface protection on carbon **steel**, copper, and copper alloys. Kotlinski, Andrzej; Jurek, Jolanta; Dalewska, Bozenna; Mieluch, Jozef (Instytut Chemii Przemyslowej, Pol.). Pol. PL 154449 B1 **19911129**, 4 pp. (Polish). CODEN: POXXA7. APPLICATION: PL 1987-269770 19871229.

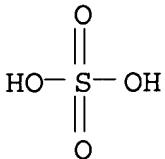
AB The anticorrosion agent consists of (0.5-4.5):1 wt. mixt. of nitrilotrimethylphosphonic acid (I) and 1-hydroxyethylidene-1,1-diphosphonic acid (II) or their sol. salts 10-65, Et acrylate copolymer with other acrylate monomers 1-40 and/or **polyacrylamide** 0.5-15 and/or polyethanamine 2-40, an azole compd. 5-40, Zn salt (as Zn) 6-25, and polycarboxylic acid, its anhydride, and/or sol. salt 3-30%. The azole compd. is preferably 2-mercaptopbenzothiazole (III), its salts, benzotriazole, or tolyltriazole. The mixt. is suitable for protection of metals and alloys in both open and closed circulation systems for heating or

cooling of water. The typical agent used at 6.2 + 10-3 wt.% contained I 29, II 6.5, polyetheramine (av. mol. wt. 3000) 16.1, ZnSO<sub>4</sub> 12.1, glutaric acid 6.1, adipic acid 3.6, succinic acid 2.4, and III 24.2%, and was added to industrial water contg. CaCl<sub>2</sub> 9.0, Na<sub>2</sub>SO<sub>4</sub> 4.5, and NaHCO<sub>3</sub> 4.0 equiv./m<sup>3</sup>. After 96 h at 333 K, the corrosion and antifouling protection on St3s **steel** was 97.2 and 98.1%, resp. The corresponding values for M70 brass were 88.5 and 82.2%.

IT 7733-02-0, Zinc sulfate (ZnSO<sub>4</sub>)  
 ) 9003-05-8, Polyacrylamide  
 (anticorrosion agent contg., brass and **steel** protection by, in water heating and cooling systems)

RN 7733-02-0 HCA

CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)

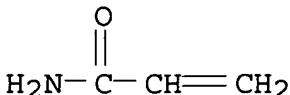


● Zn

RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C<sub>3</sub> H<sub>5</sub> N O



IT 11121-90-7, Carbon **steel**, reactions  
 12675-89-7, M70 54297-28-8, St3s, reactions  
 (corrosion of, inhibitor for fouling and, in water heating and cooling systems)

RN 11121-90-7 HCA

CN Steel, carbon (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 12675-89-7 HCA

CN Copper alloy, base, Cu 68.5-71.5, Zn 28-31, Pb 0-0.07, Fe 0-0.05 (UNS C26000) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	68.5 - 71.5	7440-50-8
Zn	28 - 31	7440-66-6
Pb	0 - 0.07	7439-92-1
Fe	0 - 0.05	7439-89-6

RN 54297-28-8 HCA

CN Steel, (PN St3S) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Fe	97 - 100	7439-89-6
Mn	0 - 1.00	7439-96-5
Si	0.10 - 0.35	7440-21-3
Cr	0 - 0.30	7440-47-3
Cu	0 - 0.30	7440-50-8
Ni	0 - 0.30	7440-02-0
C	0 - 0.22	7440-44-0
Mo	0 - 0.10	7439-98-7
P	0 - 0.050	7723-14-0
S	0 - 0.050	7704-34-9

IC ICM C23F011-10

CC 56-6 (Nonferrous Metals and Alloys)

Section cross-reference(s): 61

ST anticorrosion mixt water heating system; cooling water antifouling mixt; **steel** anticorrosion mixt water system; brass anticorrosion mixt water system; copper anticorrosion mixt water system; phosphonate anticorrosion mixt water

IT Corrosion inhibitors

(in water, heating and cooling systems with, for protection of brass and **steel**)

IT Polyethers, miscellaneous  
(polyamine-, anticorrosion agent contg., brass and **steel**  
protection by, in water heating and cooling systems)

IT Polyamines  
(polyether-, anticorrosion agent contg., brass and **steel**  
protection by, in water heating and cooling systems)

IT 95-14-7, 1H-Benzotriazole 110-15-6, Succinic acid, uses  
110-94-1, Glutaric acid 124-04-9, Adipic acid, uses 140-88-5D,  
Ethyl acrylate, polymers with acrylate 149-30-4,  
2-Mercaptobenzothiazole 2809-21-4, 1-Hydroxyethylidene-1,1-  
diphosphonic acid 6419-19-8, Nitrilotrimethylphosphonic acid  
7733-02-0, Zinc sulfate (ZnSO<sub>4</sub>)  
) 9003-05-8, Polyacrylamide 29385-43-1,  
Tolyltriazole  
(anticorrosion agent contg., brass and **steel** protection  
by, in water heating and cooling systems)

IT 7440-50-8, Copper, reactions 11121-90-7, Carbon  
**steel**, reactions 12675-89-7, M70  
54297-28-8, St3s, reactions  
(corrosion of, inhibitor for fouling and, in water heating and  
cooling systems)

L44 ANSWER 8 OF 25 HCA COPYRIGHT 2006 ACS on STN

111:114360 Mineral fibers for hydroponic culture. Takahashi, Masaharu  
(Ibiden Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63317026 A2  
19881226 Showa, 6 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1987-154049 19870619.

AB Hydroponic fibers are prep'd. by coating with N-contg. resins mineral  
fibers consisting of sol. silicic acid, H<sub>3</sub>PO<sub>4</sub>, citrate-sol.  
magnesia, citrate-sol. K, and lime in addn. to  $\geq$ 1 trace  
element, i.e. citrate-sol. Mn, B, Fe, Mo, Cu, and Zn. Mineral  
fibers were prep'd. by mixing P ores 36, serpentine 21, **steel**  
slag 3, and Indian K feldspar 40 parts by wt., firing the mixt. at  
1550°, and shaping into fibers. The av. fiber diam. was 5  
 $\mu$ m, and av. length 4 cm. The compn. was SiO<sub>2</sub> 40.0, P<sub>2</sub>O<sub>5</sub> 12.5,  
CaO 18.3, MgO 9.1, FeO 2.6, K<sub>2</sub>O 6.0, and other components 11.5% by  
wt. The fibers were insol. in H<sub>2</sub>O, but sol. in 2% citric acid. The  
fibers (1 kg) were soaked in 400 mL polyacrylamide soln.,  
treated with 10% H<sub>2</sub>SO<sub>4</sub>, dried, and made into a mat (10 + 10  
+ 5 cm).

IT 7440-66-6, Zinc, biological studies 9003-05-8,  
Polyacrylamide

(mineral fibers contg., for hydroponic culture)

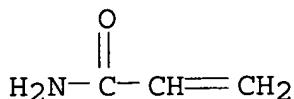
RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IC ICM A01G031-00  
 ICS C05G001-00  
 CC 19-2 (Fertilizers, Soils, and Plant Nutrition)  
 Section cross-reference(s): 11  
 ST mineral fiber **Polyacrylamide** hydroponics  
 IT 1309-48-4, Magnesia, biological studies 1343-98-2, Silicic acid  
 7439-89-6, Iron, biological studies 7439-96-5, Manganese,  
 biological studies 7439-98-7, Molybdenum, biological studies  
 7440-09-7, Potassium, biological studies 7440-42-8, Boron,  
 biological studies 7440-50-8, Copper, biological studies  
**7440-66-6**, Zinc, biological studies 7664-38-2, Phosphoric  
 acid, biological studies **9003-05-8**, **Polyacrylamide**  
 (mineral fibers contg., for hydroponic culture)

L44 ANSWER 9 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 109:158737 A decorative zinc-plated **steel** sheet and a method  
 for manufacturing the sheet. Shindo, Yoshio; Saito, Katsushi;  
 Yamazaki, Fumio; Murata, Toshimichi (Nippon Steel Corp., Japan).  
 Jpn. Kokai Tokkyo Koho JP 63014890 A2 **19880122** Showa, 7  
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-157204  
 19860705.

AB The title sheet is comprised of a Zn or Zn alloy plating film

( $\geq 5$  g/m<sup>2</sup>) and a bright Zn or Zn alloy plating film ( $\geq 0.5$  g/m<sup>2</sup>). A method for manufg. the sheet involves the following steps: (1) plating a cleaned cold-rolled **steel** sheet with Zn or its alloy ( $\geq 5$  g/m<sup>2</sup>); (2) carrying out an org.-composite Zn or its alloy bright electroplating at  $\geq 30$  C/dm<sup>2</sup> in a bath (pH  $\leq 1.5$ ) contg. a H<sub>2</sub>O-sol. linear polymer (e.g., polyaminesulfone) and Zn<sup>2+</sup>, Cr<sup>3+</sup>, Ni<sup>2+</sup>, Fe<sup>2+</sup>, and/or Co<sup>2+</sup>; and (3) optionally carrying out guard coating.

IT 9003-05-8

(brighteners, for zinc electroplating)

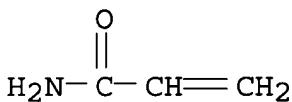
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, uses and miscellaneous  
(electroplating of, bright, on **steel** sheets)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 37345-61-2 54134-51-9 84103-19-5,  
Chromium, iron, zinc 111738-78-4, Chromium, cobalt, zinc  
(electroplating of, bright, on **steel** sheets)

RN 37345-61-2 HCA

CN Iron alloy, nonbase, Fe,Zn (9CI) (CA INDEX NAME)

Component	Component
	Registry Number

---

Fe	7439-89-6
Zn	7440-66-6

RN 54134-51-9 HCA  
CN Chromium alloy, nonbase, Cr,Zn (9CI) (CA INDEX NAME)

Component	Component
Registry	Number
Cr	7440-47-3

RN 84103-19-5 HCA  
CN Chromium alloy nonbase Cr,Fe,Zn (9CT) (CA INDEX NAME)

Component	Component
	Registry Number
Cr	7440-47-3
Fe	7439-89-6
Zn	7440-66-6

RN 111738-78-4 HCA  
CN Cobalt alloy, nonbase, Co,Cr,Zn (9CI) (CA INDEX NAME)

Component	Component Registry Number
Co	7440-48-4
Cr	7440-47-3
Zn	7440-66-6

IT 58923-87-8  
(electroplating of, on steel sheets)

RN 58923-87-8 HCA  
CN Zinc alloy, base, Zn 90, Ni 10 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	90	7440-66-6
Ni	10	7440-02-0

IC ICM C25D005-26

ICS C25D005-10  
CC 72-8 (Electrochemistry)  
Section cross-reference(s): 55  
ST zinc alloy bright electroplating **steel**  
IT 9003-05-8  
    (brighteners, for zinc electroplating)  
IT 7440-66-6, Zinc, uses and miscellaneous  
    (electroplating of, bright, on **steel** sheets)  
IT 37345-61-2 54134-51-9 84103-19-5,  
Chromium, iron, zinc 111738-78-4, Chromium, cobalt, zinc  
    (electroplating of, bright, on **steel** sheets)  
IT 58923-87-8  
    (electroplating of, on **steel** sheets)

L44 ANSWER 10 OF 25 HCA COPYRIGHT 2006 ACS on STN  
107:48271 Preparation of plated **steel** with good drawability,  
coating adhesion, and finishing coatability, and acidic zinc  
electroplating bath therefor. Shindo, Yoshio; Saito, Katsushi;  
Wada, Koichi; Yamazaki, Fumio (Nippon Steel Corp., Japan). Jpn.  
Kokai Tokkyo Koho JP 61186491 A2 19860820 Showa, 5 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-24470 19850213.

AB The title **steel** is prep'd. by electroplating a  
**steel** in an acidic Zn or Zn alloy bath contg. 1-100 ppm  
linear ultrahigh-mol.-wt. (106-108) nonionic **polyacrylamide**  
(I). The title electroplating bath is composed of Zn<sup>2+</sup> 0.7-2.0 M  
and 1-100 ppm I with or without Ni or Fe ions 0.1-2.0 M. The pH of  
the bath is 0.5-2.0. Thus, a **steel** plate was  
electroplated with Zn (60 g/m<sup>2</sup>) in a bath composed of ZnSO<sub>4</sub>  
.7H<sub>2</sub>O 260, Na<sub>2</sub>SO<sub>4</sub> 100 g/L, and I (mol. wt. 107) 10 ppm at  
55°, pH 1.2, and 50 A/dm<sup>2</sup>. It was then coated with Cr (15  
mg/m<sup>3</sup>), and finally with a 20 μ-thick white melamine-alkyd resin.  
A beautiful coating was obtained with excellent coating adhesion.  
In the absence of I, the adhesion of the plate was poor.

IT 9003-05-8, **Polyacrylamide**  
    (electroplating of **steel** with zinc from baths contg.)

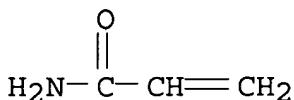
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc, uses and miscellaneous  
 (electroplating of, on **steel**, from baths contg.  
**polyacrylamide**)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IC ICM C25D003-22  
 ICS C25D005-26

CC 72-8 (Electrochemistry)

ST zinc electroplating **steel**; **polyacrylamide** zinc  
 electroplating **steel**

IT Zinc alloy, base  
 (electroplating of, on **steel**, from baths contg.  
**polyacrylamide**)

IT 9003-05-8, Polyacrylamide  
 (electroplating of **steel** with zinc from baths contg.)

IT 7440-66-6, Zinc, uses and miscellaneous  
 (electroplating of, on **steel**, from baths contg.  
**polyacrylamide**)

L44 ANSWER 11 OF 25 HCA COPYRIGHT 2006 ACS on STN

106:106291 Study of cooling in aqueous polymer solutions by using motion-picture filming. Kobasko, N. I.; Timchenko, N. P. (Inst. Tekh. Teplofiz., Kiev, USSR). Metallovedenie i Termicheskaya Obrabotka Metallov (10), 25-9 (Russian) 1986. CODEN: MTOMAX. ISSN: 0026-0819.

AB Al alloy D16 [12616-84-1] and stainless **steel**  
 12Kh18N9T, quenched in 0.44% **polyacrylamide** [  
 9003-05-8] aq. soln. by immersion along their vertical axis  
 of 80 + 20mm-diam. specimens, had a film boiling for about  
 half of the cooling period. The motion-picture films showed that  
 thermocouples did not give correct information as they interfered  
 with cooling.

IT 9003-05-8, Polyacrylamide  
 (quenching by aq., of aluminum alloys and steels)

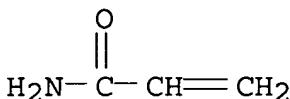
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 12616-84-1, D16  
 (quenching of, in aq. polyacrylamide solns., motion picture detn. of processes in)

RN 12616-84-1 HCA

CN Aluminum alloy, base, Al 91-95, Cu 3.8-4.9, Mg 1.2-1.8, Mn 0.30-0.90, Fe 0-0.50, Si 0-0.50, Zn 0-0.25, Cr 0-0.10 (AA 2024) (9CI) (CA INDEX NAME)

Component	Component	Component		
	Percent	Registry Number		
<hr/>				
Al	91	-	95	7429-90-5
Cu	3.8	-	4.9	7440-50-8
Mg	1.2	-	1.8	7439-95-4
Mn	0.30	-	0.9	7439-96-5
Fe	0	-	0.50	7439-89-6
Si	0	-	0.50	7440-21-3
Zn	0	-	0.25	7440-66-6
Cr	0	-	0.10	7440-47-3

CC 56-5 (Nonferrous Metals and Alloys)

Section cross-reference(s): 38, 55, 74

ST quenching polyacrylamide aluminum alloy steel;  
 stainless steel quenching polyacrylamide; motion picture quenching polyacrylamide

IT Quenching  
 (of aluminum alloys and steels, in aq.

polyacrylamide, motion picture filming of)  
IT Quenching materials  
(polyacrylamide aq. solns., for aluminum alloys and  
steels)  
IT Photography  
(cine-, of quenching of aluminum alloy and stainless  
steel in aq. polyacrylamide solns.)  
IT 9003-05-8, Polyacrylamide  
(quenching by aq., of aluminum alloys and steels)  
IT 12616-84-1, D16 133199-22-1  
(quenching of, in aq. polyacrylamide solns., motion  
picture detn. of processes in)

L44 ANSWER 12 OF 25 HCA COPYRIGHT 2006 ACS on STN

104:217393 Electron transfer during plastic flow under pressure in  
metals and in metal-polymer composites. Berlin, Yu. A.; Beshenko,  
S. I.; Zhorin, V. A.; Enikolopyan, N. S. (Inst. Khim. Fiz., Moscow,  
USSR). Doklady Akademii Nauk SSSR, 287(5), 1154-6 [Phys. Chem.]  
(Russian) 1986. CODEN: DANKAS. ISSN: 0002-3264.

AB The elec. current formed during the plastic deformation of metals  
and metal-polymer composites was studied. A correlation is obsd. of  
the current intensity with the size of the deformation and the metal  
work function. The current increases nearly linearly as the  
pressure increases. In composites with polymers, the currents  
appear at higher stresses. The current increases as the pressure or  
the metal content increases. A defect mechanism for the electron  
transfer is proposed. This mechanism explains results obsd. in  
steel and alloy VK-6.

IT 7440-66-6, properties  
(elec. current during plastic deformation of)

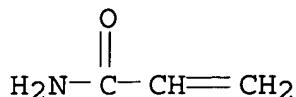
RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8  
(plastic-deformation-induced elec. current in metal composite  
from)  
RN 9003-05-8 HCA  
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
CMF C3 H5 N O

CC 76-7 (Electric Phenomena)  
 Section cross-reference(s): 36, 56

IT 7429-90-5, properties 7439-92-1, properties 7440-02-0,  
 properties 7440-50-8, properties **7440-66-6**, properties  
 (elec. current during plastic deformation of)

IT 9002-84-0 9002-88-4 **9003-05-8** 9003-07-0  
 (plastic-deformation-induced elec. current in metal composite  
 from)

L44 ANSWER 13 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 103:13581 Acid zinc and zinc alloy electroplating solution and process.  
 Strom, Alice M.; Herr, R. Wilbur; Martin, Sylvia (OMI International  
 Corp., USA). U.S. US 4515663 A **19850507**, 6 pp.  
 (English). CODEN: USXXAM. APPLICATION: US 1984-568361 19840109.

AB Aq. acid electroplating baths for Zn, Zn-Co, Zn-Ni or Zn-Co-Ni  
 alloys are described. A polyhydroxy additive contg.  $\geq 3$  OH  
 groups and  $\geq 4$  C atoms is used in addn. to the familiar bath  
 constituents. Adherent bright, level and decorative Zn was  
 electroplated in a bath contg.: ZnCl<sub>2</sub> 55, NaCl, 150, H<sub>3</sub>BO<sub>3</sub> 7.5,  
 trimethylolpropane (polyhydroxy additive) 7.5, Na benzoate (carrier  
 brightener) 2.5, Surfynol 485 (a nonionic polyether wetting agent  
 and carrier brightener comprising 2,4,7,9-tetramethyl-5-decyne-4,7-  
 diol, ethoxylated) 4.8 g/L, butyl nicotinate di-Me sulfate  
 quaternary (supplemental brightener) 60 mg/L and HCl to pH 5.  
 Plating of **steel** was carried out at 75° and  
 cathodic c.d. 30 A/ft<sup>2</sup> for 10-30 min.

IT **7440-66-6**, uses and miscellaneous  
 (electroplating of, baths contg. polyhydroxy additive for)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 96902-70-4 96902-71-5 96902-72-6  
(electroplating of, baths contg. polyhydroxy additive for)  
RN 96902-70-4 HCA  
CN Zinc alloy, base, Zn 100, Ni 0.3 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Zn	100	7440-66-6
Ni	0.3	7440-02-0

RN 96902-71-5 HCA  
CN Zinc alloy, base, Zn 99, Co 0.7, Ni 0.6 (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
Zn	99	7440-66-6
Co	0.7	7440-48-4
Ni	0.6	7440-02-0

RN 96902-72-6 HCA  
CN Zinc alloy, base, Zn 99, Co 0.6 (9CI) (CA INDEX NAME)

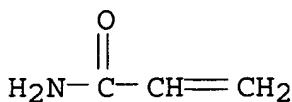
Component	Component	Component
	Percent	Registry Number
Zn	99	7440-66-6
Co	0.6	7440-48-4

IT 9003-05-8  
(in electroplating, of zinc and its alloys)  
RN 9003-05-8 HCA  
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

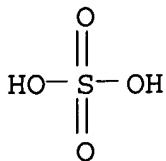
CMF C3 H5 N O



IC ICM C25D003-22  
 ICS C25D003-56  
 INCL 204044200  
 CC 72-8 (Electrochemistry)  
 IT 7440-66-6, uses and miscellaneous  
     (electroplating of, baths contg. polyhydroxy additive for)  
 IT 96902-70-4 96902-71-5 96902-72-6  
     (electroplating of, baths contg. polyhydroxy additive for)  
 IT 122-57-6 9003-05-8 25155-19-5D, alkyl derivs.  
     96990-07-7  
     (in electroplating, of zinc and its alloys)

L44 ANSWER 14 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 99:218390 Method and composition for inhibiting corrosion and deposition  
 in aqueous systems. Geiger, Gary Edwin (Betz Europe, Inc., USA).  
 Eur. Pat. Appl. EP 91763 A1 19831019, 38 pp. DESIGNATED  
 STATES: R: BE, DE, FR, GB, IT, NL. (English). CODEN: EPXXDW.  
 APPLICATION: EP 1983-301877 19830331. PRIORITY: US 1982-364562  
 19820401.

AB A compn. for inhibiting corrosion and scale deposition on metallic  
 surfaces in contact with an aq. system contains a water-sol. Zn  
 compd. which liberates Zn<sup>2+</sup> in soln., a water-sol. cellulose gum,  
 and an organophosphorus acid compd. or water-sol. salt thereof. The  
 method is used for treating cooling water systems of the type prone  
 to scale formation on and corrosion of metallic parts.  
 IT 7733-02-0 9003-05-8D, hydrolyzed  
     (corrosion and scale inhibitor contg., for water systems)  
 RN 7733-02-0 HCA  
 CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)

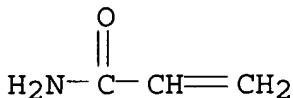


● Zn

RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IT 12605-48-0 12725-33-6, reactions  
 (corrosion and scaling of, in aq. systems, prevention of, compns.  
 for)

RN 12605-48-0 HCA  
 CN Copper alloy, base, Cu 70.0-73.0, Zn 26-29, Sn 0.8-1.2, Pb 0-0.07, Fe  
 0-0.06 (UNS C44200) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	70.0 - 73.0	7440-50-8
Zn	26 - 29	7440-66-6
Sn	0.8 - 1.2	7440-31-5
Pb	0 - 0.07	7439-92-1
Fe	0 - 0.06	7439-89-6

RN 12725-33-6 HCA  
 CN Steel, (AISI 1010) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
<hr/>		
Fe	99 - 100	7439-89-6
Mn	0.30 - 0.60	7439-96-5
Si	0.10 - 0.35	7440-21-3
C	0.08 - 0.13	7440-44-0
S	0 - 0.050	7704-34-9
P	0 - 0.040	7723-14-0

IC C02F005-08; C23F011-08

CC 61-8 (Water)

IT 95-14-7 149-30-4 2809-21-4 6419-19-8 **7733-02-0**

9003-05-8D, hydrolyzed 9003-53-6D, sulfonated 9004-32-4  
 9004-65-3 23605-74-5 24937-72-2 29385-43-1 34229-21-5  
 37971-36-1 54193-36-1 82851-89-6

(corrosion and scale inhibitor contg., for water systems)

IT **12605-48-0 12725-33-6**, reactions(corrosion and scaling of, in aq. systems, prevention of, compns.  
for)

L44 ANSWER 15 OF 25 HCA COPYRIGHT 2006 ACS on STN

98:97968 Brightener for zinc alloy electroplating bath. Martin, S.  
 (Occidental Chemical Co., USA). Belg. BE 893534 A1 **19821216**  
 , 8 pp. (French). CODEN: BEXXAL. APPLICATION: BE 1982-208365  
 19820616. PRIORITY: US 1981-274085 19810616.

AB An acid bath is described for the rapid electroplating of a Zn alloy on a conductive substrate over a broad range of c.d. values to form a bright or semibright corrosion-resistance layer. The electroplate can be Zn-Ni, Zn-Co, or Zn-Ni-Co alloy on brass or **steel**. The brightener is chosen from a homopolymer of acrylamide, of N-substituted acrylamide or a copolymer of the 2 and/or a solubilizing agent selected from methacrylic acid, acrylic acid, acrylonitrile, methylacrylonitrile, vinyl halides, epihalohydrins, vinylidene halides, alkylene oxides, C1-5 vinylic alkyl ethers, and their mixts. In an example a bright, uniform Zn-Ni deposit is formed rapidly at c.d. 1890 A/m<sup>2</sup> on a **steel** pipe in a cell in which the bath flows countercurrently. The bath comprises an aq. soln. of: **ZnSO<sub>4</sub>.cntdot.H<sub>2</sub>O** 100, **NiSO<sub>4</sub>·6H<sub>2</sub>O** 75, and **polyacrylamide** (PM 19,000) 1.5 g/L.

IT **11115-09-6 37346-11-5 84813-42-3**

(electroplating of, brightener for)

RN 11115-09-6 HCA

CN Cobalt alloy, nonbase, Co, Zn (9CI) (CA INDEX NAME)

Component      Component  
                  Registry Number

RN 37346-11-5 HCA

CN Nickel alloy, nonbase, Ni, Zn (9CI) (CA INDEX NAME)

Component      Component  
                  Registry Number

=====+=====

Ni	7440-02-0
Zn	7440-66-6

RN 84813-42-3 HCA

CN Cobalt alloy, nonbase, Co, Ni, Zn (9CI) (CA INDEX NAME)

Component      Component  
                  Registry Number

Co	7440-48-4
Ni	7440-02-0
Zn	7440-66-6

IT 9003-05-8

(in electroplating of zinc alloys, brightener)

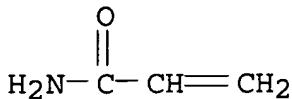
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



ICI C09  
 CC 72-8 (Electrochemistry)  
 IT 11115-09-6 37346-11-5 84813-42-3  
     (electroplating of, brightener for)  
 IT 9003-05-8  
     (in electroplating of zinc alloys, brightener)

L44 ANSWER 16 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 96:221890 Polymer-containing working media for vibration abrasive treatment of metals and alloys. Nakhaev, P. P. (USSR). Deposited Doc., VINITI 4423-80, 118-21 Avail. VINITI (Russian) 1980

AB The effect of polymer addns. on vibration abrasive treatment of Cu,  
 D16 [12616-84-1] Al alloy, steels steel  
 45 [37268-90-9], 45KhN [39324-18-0], and U8 [  
 12743-82-7], and VK15 [11107-01-0] cemented carbide by using grinding disks was investigated at an oscillation amplitude of 3.5 mm and frequency 24 Hz. poly(vinyl alc.) [9002-89-5]  $\leq$  4 Or polyacrylamide [9003-05-8]  $\leq$  0.28 wt.% were added to the aq medium. Generally, the machining efficiency increased with increasing viscosity of the working medium.

IT 12616-84-1 12743-82-7, uses and miscellaneous  
 37268-90-9, uses and miscellaneous  
     (vibration-abrasive treatment of, polymer-contg. working media for)

RN 12616-84-1 HCA

CN Aluminum alloy, base, Al 91-95,Cu 3.8-4.9,Mg 1.2-1.8,Mn 0.30-0.90,Fe 0-0.50,Si 0-0.50,Zn 0-0.25,Cr 0-0.10 (AA 2024) (9CI) (CA INDEX NAME)

Component	Component	Component
	Percent	Registry Number
=====+=====+=====		
Al	91 - 95	7429-90-5
Cu	3.8 - 4.9	7440-50-8
Mg	1.2 - 1.8	7439-95-4

Mn	0.30	-	0.9	7439-96-5
Fe	0	-	0.50	7439-89-6
Si	0	-	0.50	7440-21-3
Zn	0	-	0.25	7440-66-6
Cr	0	-	0.10	7440-47-3

RN 12743-82-7 HCA  
 CN Steel, (AISI W1-7.5) (9CI) (CA INDEX NAME)

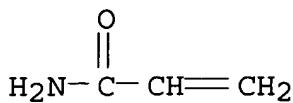
Component	Component	Component	
	Percent	Registry Number	
Fe	97	- 99	7439-89-6
C	0.75	- 0.85	7440-44-0
Mn	0.10	- 0.40	7439-96-5
Si	0.10	- 0.40	7440-21-3
Cu	0	- 0.20	7440-50-8
Ni	0	- 0.20	7440-02-0
Cr	0	- 0.15	7440-47-3
W	0	- 0.15	7440-33-7
Mo	0	- 0.10	7439-98-7
V	0	- 0.10	7440-62-2
P	0	- 0.030	7723-14-0
S	0	- 0.030	7704-34-9

RN 37268-90-9 HCA  
 CN Steel, (AISI 1045) (9CI) (CA INDEX NAME)

Component	Component	Component	
	Percent	Registry Number	
Fe	98	- 99	7439-89-6
Mn	0.60	- 0.90	7439-96-5
C	0.43	- 0.50	7440-44-0
Si	0	- 0.35	7440-21-3
S	0	- 0.050	7704-34-9
P	0	- 0.040	7723-14-0

IT 9003-05-8  
 (working medium contg., for grinding of metals and alloys)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
CMF C3 H5 N O

CC 56-11 (Nonferrous Metals and Alloys)

ST copper vibration grinding polymer medium; aluminum vibration grinding polymer medium; **steel** vibration grinding polymer medium; carbide vibration grinding polymer medium; polymer grinding medium metal

IT 7440-50-8, uses and miscellaneous 11107-01-0 **12616-84-1**  
**12743-82-7**, uses and miscellaneous 37268-90-9,  
uses and miscellaneous 39324-18-0  
(vibration-abrasive treatment of, polymer-contg. working media for)

IT 9002-89-5 **9003-05-8**  
(working medium contg., for grinding of metals and alloys)

L44 ANSWER 17 OF 25 HCA COPYRIGHT 2006 ACS on STN

92:49459 Brightening composition for acid zinc electroplating bath.  
Martin, Sylvia (Oxy Metal Industries Corp., USA). U.S. US 4176017  
19791127, 7 pp. (English). CODEN: USXXAM. APPLICATION: US  
1979-7740 19790131.

AB An acid electroplating bath for bright Zn is described comprising sol. **polyacrylamide** polymers as well as substituted derivs. and copolymers and secondary brighteners comprising H<sub>3</sub>BO<sub>3</sub> and its Group I and II metal salts and/or thiourea and its derivs. as well as adducts. Thus, Zn was electroplated on a **steel** test panel from a bath contg.: ZnSO<sub>4</sub> 175, **polyacrylamide** 0.25, and phenylthiourea 0.25 g/L at pH 4.7, 75° F, 50 A/ft<sup>2</sup> for 10 min. The Zn-plated panel was bright in the high c.d. areas and had a light gray color in the low c.d. areas. A **steel** test panel with bright Zn electroplate over all areas was obtained at 300 A/ft<sup>2</sup> and 75°F from a bath contg.: ZnSO<sub>4</sub> 200, H<sub>3</sub>BO<sub>3</sub> 23, NH<sub>4</sub>Cl 15, **polyacrylamide** (mol. wt. 106) 0.05, and allylthiourea 0.15

g/L at pH 4.5.

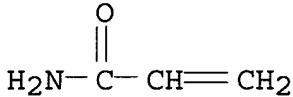
IT 7440-66-6, uses and miscellaneous  
     (electroplating of, acid bath for bright)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9003-05-8D, derivs.  
     (in electroplating, of bright zinc)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

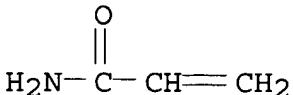
CRN 79-06-1  
 CMF C3 H5 N O



IT 9003-05-8  
     (in electroplating, of bright zinc on steel)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



IC C25D003-22  
 INCL 204055000R  
 CC 72-6 (Electrochemistry)

ST bright zinc electroplating; **polyacrylamide** bright zinc electroplating; **acrylamide polymer** bright zinc electroplating; thiourea **polyacrylamide** zinc electroplating; allylthiourea **polyacrylamide** zinc electroplating; boric acid **polyacrylamide** zinc electroplating; phenylthiourea bright zinc electroplating  
IT 10043-35-3  
(electroplating of bright zinc from baths contg.  
**polyacrylamide** and)  
IT 62-56-6, uses and miscellaneous 62-56-6D, derivs. 103-85-5  
109-57-9  
(electroplating of bright zinc from baths contg.  
**polyacrylamides** and)  
IT 10043-35-3D, alkali metal and alk. earth salt 29146-81-4  
38878-00-1  
(electroplating of bright zinc from baths contg.  
**polyacrylamides** and)  
IT 7440-66-6, uses and miscellaneous  
(electroplating of, acid bath for bright)  
IT 9003-05-8D, derivs. 27119-07-9 28156-60-7  
(in electroplating, of bright zinc)  
IT 9003-05-8  
(in electroplating, of bright zinc on **steel**)

L44 ANSWER 18 OF 25 HCA COPYRIGHT 2006 ACS on STN

91:78526 Treatment of wastewaters from the coil metal paint shops at the Chelyabinsk plant for metal-cladding of **steel**. Skul'skii, V. M.; Militsin, S. V.; Khodorovskii, P. Ya. (USSR). Lakokrasochnye Materialy i Ikh Primenenie (2), 64-6 (Russian) 1979.  
CODEN: LAMAAD. ISSN: 0023-737X.

AB Acidic, alk., CN-, Cr<sub>6+</sub>, and emulsion contg. wastewaters are treated sep. and then combined for settling and sepn. Cr<sub>6+</sub> is reduced with NaHSO<sub>3</sub> to Cr<sub>3+</sub>. Wastewater contg. CN- is oxidized with NaOCl at pH 10 maintained by the addn. of Ca(OH)<sub>2</sub>. Emulsions are broken with HCl which decreases the pH to 3, and surfactants are collected on the surface by blowing compressed air into the tank. Pptn. of Cr<sub>3+</sub>, Zn<sub>2+</sub> and other metals occurs in a tank with pH between 9.0 and 9.5 adjusted with Ca(OH)<sub>2</sub>. NaOH could be used instead and **poly** (**acrylamide**) [9003-05-8] may be added to improve sedimentation.

IT 7440-66-6, uses and miscellaneous  
(removal of, from paint shop wastewater)

RN 7440-66-6 HCA  
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

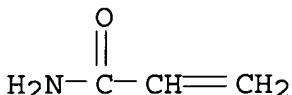
Zn

IT 9003-05-8  
(sedimentation by, of paint shop wastewater)

RN 9003-05-8 HCA  
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
CMF C3 H5 N O



CC 60-2 (Sewage and Wastes)  
Section cross-reference(s): 42, 55  
ST paint shop wastewater treatment; **polyacrylamide**  
sedimentation paint shop wastewater; cyanide removal paint shop  
wastewater; chromium removal paint shop wastewater; zinc removal  
paint shop wastewater; emulsion breaking paint shop wastewater;  
surfactant removal paint shop wastewater  
IT Wastewater treatment  
(sedimentation, of paint shop effluents, **polyacrylamide**  
in)  
IT 7440-47-3, uses and miscellaneous 7440-66-6, uses and  
miscellaneous  
(removal of, from paint shop wastewater)  
IT 9003-05-8  
(sedimentation by, of paint shop wastewater)

L44 ANSWER 19 OF 25 HCA COPYRIGHT 2006 ACS on STN  
82:174279 Corrosion inhibitors. Hollingshead, William R.; Ralston, Paul  
H. (Calgon Corp.). Ger. Offen. DE 2426613 19750102, 10  
pp. (German). CODEN: GWXXBX. APPLICATION: DE 1974-2426613  
19740531.

AB Corrosion inhibitors for **steel** in O-contg. water consisted of mixts. contg. Zn<sup>2+</sup> and polyacrylic acid, Na polyacrylate, and(or) **polyacrylamide**. Thus, the corrosion loss of **steel** in water contg. 10 ppm Zn<sup>2+</sup> and 10 ppm partially hydrolyzed **polyacrylamide** of mol. wt. .apprx.7000 was 14 mg/dm<sup>2</sup> per day compared with 143 mg/dm<sup>2</sup> per day for water contg. 10 ppm polacrylamide only.

IT 9003-05-8

(corrosion inhibitor, for **steel** in oxygen-contg. water)

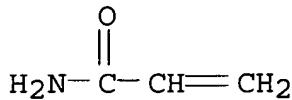
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, uses and miscellaneous  
(corrosion inhibitors contg., for **steel** in  
oxygen-contg. water)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 12597-69-2, reactions

(corrosion of, by oxygen-contg. water, inhibitors for)

RN 12597-69-2 HCA

CN Steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IC C23F

CC 55-9 (Ferrous Metals and Alloys)

Section cross-reference(s): 61

ST corrosion inhibitor **steel**; polyacrylate sodium corrosion inhibitor; **polyacrylamide** corrosion inhibitor; water corrosion inhibitor **steel**; zinc corrosion inhibitor

**steel**

IT 9003-01-4 9003-04-7 **9003-05-8**  
(corrosion inhibitor, for **steel** in oxygen-contg. water)

IT **7440-66-6**, uses and miscellaneous  
(corrosion inhibitors contg., for **steel** in  
oxygen-contg. water)

IT **12597-69-2**, reactions  
(corrosion of, by oxygen-contg. water, inhibitors for)

L44 ANSWER 20 OF 25 HCA COPYRIGHT 2006 ACS on STN

77:168501 Removing tubercles of corrosion from metal substrates using organic polymers and silica and (or) chromium compounds. Puckorius, Paul R.; Zimmie, William E. (W. E. Zimmie Inc.). U.S. US 3658710 19720425, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1971-106285 19710113.

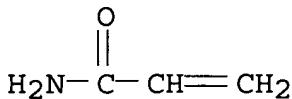
AB Corrosion inhibiting compns. are prep'd. which contain 2 org. polymers, a water-sol. SiO<sub>2</sub> compd. and (or) a water-sol. Cr compd. The first polymer is electrolytic and prep'd. from compns. contg. the structure >C:C(R)- (R = an amide, CN, NH, or COOM; where M = H, NH<sub>4</sub>, metals, or org. radicals), has an av. mol. wt. from apprx. 15,000-15,000,000 and a wt. concn. of 0.01-300 ppm water. The hydrocarbon portion of the polymer may contain H, halogen, alkyl, or aryl groups. The 2nd polymer is selected from the group consisting of poly(acrylic acid), polyacrylates, org. phosphonates, and their mixts. with av. mol. wts. of about 1000-50,000 and wt. concns. of 0.5-20 ppm water. The SiO<sub>2</sub> compd. ranges from 0.1-500 ppm water with a SiO<sub>2</sub>/Na<sub>2</sub>O wt. ratio of 0.67-3.75. Comparative tests illustrate corrosion effectiveness in water at pH 7.2-7.4 using Na<sub>2</sub>CrO<sub>4</sub>, Na<sub>2</sub>SiO<sub>3</sub>, and **polyacrylamide** having an av. mol. wt. of 3-50,000 both sep. and in combinations. Thus, after 6 days exposure to Cleveland tap water contg. 50 ppm chromate a **steel** specimen developed heavy Fe<sub>2</sub>O<sub>3</sub> deposits and pronounced pitting. Substituting the compn. contg. the polymer previously cited at 2, SiO<sub>2</sub> at 25, and chromate at 25 ppm resulted in a clean specimen with no pitting.

IT **9003-05-8**  
(corrosion inhibition by compns. contg.)

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CRN 79-06-1  
 CMF C3 H5 N O



IT **7440-66-6**, Zinc  
     (org., corrosion inhibition by compn. contg.)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IC C02B  
 INCL 252087000  
 CC 61-7 (Water)  
     Section cross-reference(s) : 37  
 IT 6834-92-0 7775-11-3 **9003-05-8**  
     (corrosion inhibition by compns. contg.)  
 IT **7440-66-6**, Zinc  
     (org., corrosion inhibition by compn. contg.)

L44 ANSWER 21 OF 25 HCA COPYRIGHT 2006 ACS on STN  
 76:131329 Inhibition of corrosion processes caused by the decarbonated water used for furnace cooling. Balaban, Lidia; Cristea, Silvia; Mercea, Viorica; Popescu, Gh. (Rom.). Revista de Coroziune, 1(4), 201-5 (Romanian) 1971. CODEN: RVCZAD. ISSN: 0370-7849.

AB Static expts. were carried out on **steel** type OLT 35 to test the inhibitory ability of different substances. Phosphates 10-150 ppm inhibited 60-70, Na silicate 6 ppm., inhibited 50 and chestnut tannin 25-150 ppm., inhibited 25-44 the degree of corrosion. Mention is made of the importance of pH control. It is considered that the best results are obtained by using water treatment with a mixt. of Na tripolyphosphate, **ZnSO<sub>4</sub>**, and org. substances such as lignin and **polyacrylamide**.

IT **12597-69-2**, reactions  
     (corrosion prevention of, agents for)  
 RN 12597-69-2 HCA  
 CN Steel (9CI) (CA INDEX NAME)

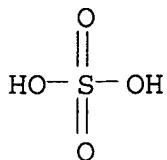
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 7733-02-0 9003-05-8

(water-treating compn.)

RN 7733-02-0 HCA

CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)



● Zn

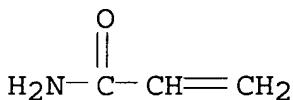
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



CC 61 (Water)

Section cross-reference(s) : 55

ST corrosion inhibition decarbonated water; **steel** corrosion  
decarbonated water; phosphate **steel** corrosion inhibition;  
silicate **steel** corrosion inhibition; tannin **steel**  
corrosion inhibition

IT Phosphates, uses and miscellaneous  
Tannins

(in corrosion prevention, of **steel**)

IT 12597-69-2, reactions

(corrosion prevention of, agents for)

IT 1344-09-8

(in corrosion prevention, of **steel**)

IT 7733-02-0 9003-05-8 9005-53-2, uses and  
miscellaneous 13573-18-7  
(water-treating compn.)

L44 ANSWER 22 OF 25 HCA COPYRIGHT 2006 ACS on STN  
66:4986 Cadmium extraction from the ores of the Hudson Bay Mining and Smelting Co.. Stickney, W. J. (Hudson Bay Mining and Smelting Co., Flin Flon, MB, Can.). Canadian Mining and Metallurgical Bulletin, 59(653), 1080-4 (English) 1966. CODEN: CMMBAZ. ISSN: 0008-4484.

AB Feed is derived 65.2% from Zn concentrates, 18.9% from Cu concentrates, and 15.9% from stockpiled residues. The Zn plant treats Zn concentrates, smelter stack dust, and fume, and produces and stockpiles an oxide residue contg. 15.9% of all the new Cd available to both plants. Cd is converted into oxide either during the roasting of the Zn concentrates or during the smelting and fuming of the Cu concentrates and Zn residues. The Cd-bearing ppt. from the Zn plant are leached first with H<sub>2</sub>SO<sub>4</sub> and then with CuSO<sub>4</sub>. Large vols. of H and some AsH<sub>3</sub> are evolved during the earlier stages of the leach, so agitation is kept to a min. and addns. of solids are made slowly. Temps. reach 65° due to the reactions. The press cake still contains some metallic Zn and Cd, and gets the 2nd leach. H<sub>2</sub>SO<sub>4</sub> is added to bring the pH to 2.8 before filtering through a press. After washing and air-blowing the press, the cake is pulped with H<sub>2</sub>O and pumped to a Cu thickener in the concentrator. The filtrate and wash water from the press are stored and added to the 1st-stage leach tanks. The cake assays Zn 6.6, Cu 63.8, Cd 2.9, As 0.08, and Sb 0.007%. The filtrate contains Zn 38, Cu 8.9, and Cd 15 g./l. Leaching this way increased Zn and Cd recoveries by 16 and 20%, resp. The rubberlined steel leach tanks are ventilated, and the pumps are either rubber lined or made of bronze. The filtrate from the 1st leach of the purification press cake is treated with Zn dust to ppt. Cd until the Cd in soln. is <0.050 g./l. The ppt. is collected and washed in a filter press, with the filtrate being returned to the Zn plant. The Cd press cake contains moisture 35.7, Zn 13.7, Cu 0.58, Cd 60.5, Tl 0.73%. Tl is pptd. by oxidizing Tl<sub>2</sub>SO<sub>4</sub> to insol. Tl<sub>2</sub>O<sub>3</sub> with KMnO<sub>4</sub>. The Tl ppt. is collected in a press, and the cake is stockpiled for future recovery. The ppt. will av. Cd 21.9, Zn 30, and Tl 11.2%. The Cd electrolytic cell soln. assays Cd 53, Zn 51, Tl 0.7, and H<sub>2</sub>SO<sub>4</sub> 64 g./l. Trees, or sprouts, form on the cathode sheet, causing shorting and poor-grade metal. Glue, which was previously added to

the cells to provide a smooth plate, has been replaced by one of the polyacrylamides. Addns. of 0.0125 lb./100 gal. feed soln. have improved current efficiency by 8%.

IT **7440-66-6P**, preparation  
     (cadmium recovery from oxides in)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

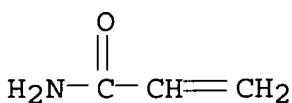
IT **7440-66-6**, reactions  
     (in cadmium cementation from leach solns.)  
 RN 7440-66-6 HCA  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **9003-05-8**  
     (in cadmium electrolysis)  
 RN 9003-05-8 HCA  
 CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
 CMF C3 H5 N O



CC 54 (Extractive Metallurgy)  
 IT 7440-50-8P, preparation **7440-66-6P**, preparation  
     (cadmium recovery from oxides in)  
 IT **7440-66-6**, reactions  
     (in cadmium cementation from leach solns.)  
 IT **9003-05-8**  
     (in cadmium electrolysis)

L44 ANSWER 23 OF 25 HCA COPYRIGHT 2006 ACS on STN

65:70194 Original Reference No. 65:13067b-c Production of surface treated lithographic plates. Leonard, Robert F.; Platt, Daniel (Litho Chemical & Supply Co., Inc.). US 3265504 19660809, 5 pp. (Unavailable). APPLICATION: US 19631213. PRIORITY: US 19631213.

AB A metal plate is simultaneously subjected to mech. and chem. treatment with an abrasive and an aq. soln. contg. a dichromate and a hydrophilic org. polymer to give a thin, tightly bonded, durable, hydrophilic surface. The resulting plate does not oxidize in storage and is esp. suitable for prep. presensitized diazo lithographic plates. Thus, a degreased Al plate was grained by using a slurry of poly(vinyl alc.) 10, (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> 30, pumice 227, and SiC 227 g. in 1000 ml. H<sub>2</sub>O, washed, and dried to give the treated plate.

IT 9003-05-8, Acrylamide, homopolymer

(lithographic plate with hydrophilic coating by surface treatment with dichromates-(VI) and)

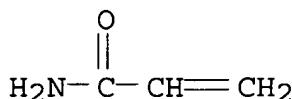
RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



IT 7440-66-6, Zinc

(lithographic plates from, hydrophilic coatings by surface treatment with dichromates(VI)-polymer mixts. of)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 12597-68-1, Stainless steel

(lithographic plates of, hydrophilic coatings by surface

treatment with dichromates(VI)-polymer mixts. of)

RN 12597-68-1 HCA

CN Stainless steel (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

INCL 090075000

CC 11 (Radiation Chemistry and Photochemistry)

IT 9003-05-8, Acrylamide, homopolymer  
(lithographic plate with hydrophilic coating by surface treatment with dichromates-(VI) and)

IT 7440-66-6, Zinc  
(lithographic plates from, hydrophilic coatings by surface treatment with dichromates(VI)-polymer mixts. of)

IT 12597-68-1, Stainless steel  
(lithographic plates of, hydrophilic coatings by surface treatment with dichromates(VI)-polymer mixts. of)

L44 ANSWER 24 OF 25 HCA COPYRIGHT 2006 ACS on STN

64:73585 Original Reference No. 64:13763e-f Bath additives for electroplating zinc and cadmium. (Yawata Iron & Steel Co., Ltd.). FR 1380297 19641127, 4 pp.; Correction of CA 63, 17486h (Unavailable). PRIORITY: JP 19630125.

AB Thin bright films deposited from acid plating baths (pH 0.2-6.5) are improved by adding 0.03-1.0 wt.% polyamide. In an example, a cold rolled steel sheet was plated for 5 min. in a bath contg.  
ZnSO<sub>4</sub> 400, Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> 25, Na<sub>2</sub>SO<sub>4</sub> 75, and polyacrylamide 5 g./l. at 40° and 6 amp./dm<sup>2</sup>. The plating had a brightness of 760 as compared with a plate obtained with a conventional Zn(CN)<sub>2</sub> bath with a brightness of 320; the brightness of a mirror is 1000.

IT 7440-66-6, Zinc  
(electrodeposition or electroplating of, polyamide baths for)

RN 7440-66-6 HCA

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

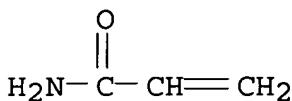
IT 9003-05-8, Acrylamide, homopolymer  
25014-12-4, Methacrylamide, homopolymer  
(electroplating of Cd and Zn from baths contg.)

RN 9003-05-8 HCA

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

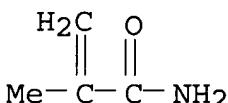
CRN 79-06-1  
 CMF C3 H5 N O



RN 25014-12-4 HCA  
 CN 2-Propenamide, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-39-0  
 CMF C4 H7 N O



IC C23B  
 CC 15 (Electrochemistry)  
 IT 7440-66-6, Zinc  
     (electrodeposition or electroplating of, polyamide baths for)  
 IT 9003-05-8, Acrylamide, homopolymer  
     25014-12-4, Methacrylamide, homopolymer  
     27754-54-7, Acrylic acid, ethyl ester, polymer with acrylamide  
     27754-54-7, 2-Propenoic acid, ethyl ester, polymer with  
     2-propenamide  
     (electroplating of Cd and Zn from baths contg.)

L44 ANSWER 25 OF 25 HCA COPYRIGHT 2006 ACS on STN

63:95451 Original Reference No. 63:17486h,17487a Bath additives for  
 electroplating zinc and copper. (Yawata Iron & Steel Co., Ltd.). FR  
 1380297 19641127, 4 pp. (Unavailable). PRIORITY: JP  
 19630125.

AB Thin films deposited from acid plating baths (pH 0.2-6.5) are  
 improved by adding 0.03-1.0 wt. % polyamide. In an example, a cold

rolled **steel** sheet was plated for 5 min. in a bath contg. **ZnSO<sub>4</sub>** 400 g./l., Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> 25 g./l., Na<sub>2</sub>SO<sub>4</sub> 75 g./l., and **polyacrylamide** 5 g./l. at 40° and 6 amp./dm.<sup>2</sup> The plating had a brightness of 760 as compared with a plate obtained with a conventional Zn(CN)<sub>2</sub> bath with a brightness of 320; the brightness of a mirror is 1000.

IT 25014-12-4, **Methacrylamide, homopolymer**  
(Zn electrodeposition from baths contg.)

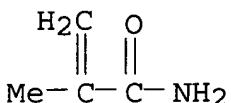
RN 25014-12-4 HCA

CN 2-Propenamide, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-39-0

CMF C4 H7 N O



IC C23B

CC 15 (Electrochemistry)

IT 25014-12-4, **Methacrylamide, homopolymer**  
(Zn electrodeposition from baths contg.)